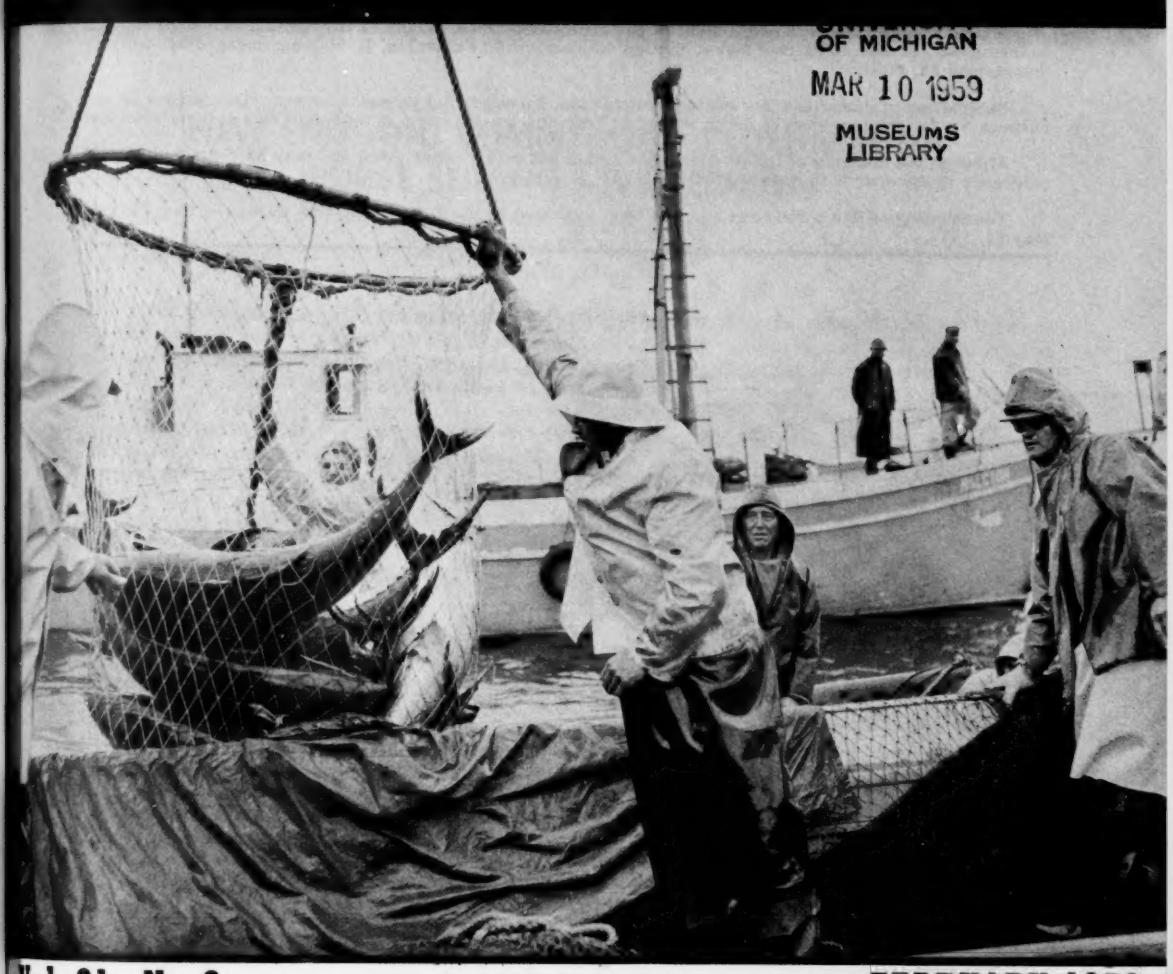
DIV. OF FISHES

COMMERCIAL FISHERIES REVIEW



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COMMERCIAL FISHERIES REVIEW

A review of developments and news of the fishery industries prepared in the BUREAU OF COMMERCIAL FISHERIES.

Joseph Pileggi, Editor
H. M. Bearse, Assistant Editor

Mailed free to members of the fishery and allied industries. Address correspondence and requests to the: Chief, Branch of Market News, Bureau of Commercial Fisheries, U. S. Department of the Interior, Washington 25, D. C.

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5/31/60

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COMMERCIAL FISHERIES REVIEW

February 1959 **Washington 25, D.C.** **Vol. 21, No. 2**

NEW ENGLAND COMMERCIAL BLUEFIN TUNA PURSE SEINING - 1958 SEASON

By James L. Squire, Jr.*

INTRODUCTION

The most successful commercial-scale fishing of bluefin tuna (Thunnus thynnus) by the purse-seine method in the New England area in recent years was done by the converted commercial trawler Silver Mink during the short 1958 tuna season. A total of 179.5 tons of bluefin tuna was landed by the Silver Mink between July 24 and October 4. This is the largest bluefin tuna catch on record for any vessel fishing in the New England area during any one season.

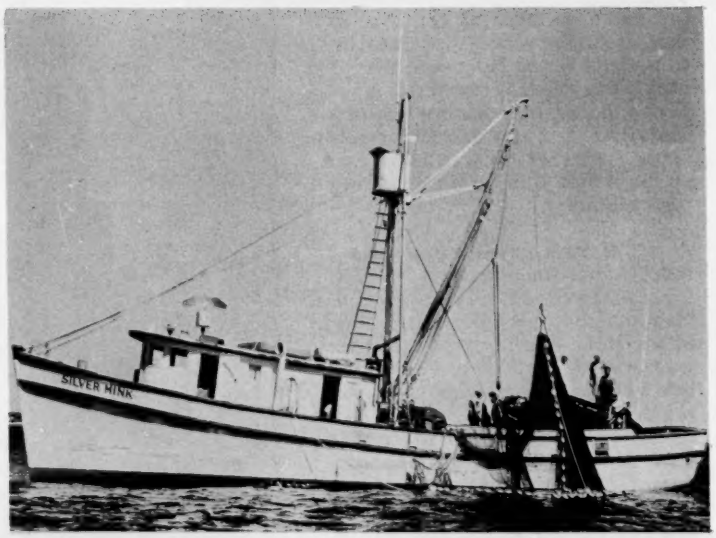

Fig. 1 - Strapping the purse seine aboard the M/V Silver Mink. This vessel is probably one of the first of its type to be converted from a standard shrimp trawler design to a tuna seiner.

Bluefin tuna are known to appear in commercial concentrations off the New England Coast from July through September and recent studies by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel Delaware revealed that bluefin tuna are abundant in the oceanic areas south of New England in the spring season.

Although no extensive organized effort has been made for many years to exploit this New England coastal resource, it has been subject to local fishing by small boats and traps. Previous fishing by purse seine, on a basis approaching commercial production, was from Gloucester, Mass., during the summers of 1938, 1939, and 1940 (table 1).

The Western Explorer, a Pacific Coast-type purse seiner was equipped with Pacific-type seine equipment. The Santa Maria, standard mackerel seiner-dragger,

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was equipped with an alternate seine used for tuna. In addition, other vessels have fished tuna during the past 20 years, but only on a limited production scale. Approximately three additional seiners operated from Gloucester for tuna during 1937 to 1941. In 1951, the Western Explorer and in 1953 the Western Pride went tuna purse-seining in the New England area, either sponsored by or in cooperation with the U. S. Fish and Wildlife Service.

Table 1 - Summary of Previous Commercial Purse-Seine Fishing for Bluefin Tuna in New England Coastal Waters

Year	Motor Vessel	Fishing Period	Catch Totals
			Short Tons
1940	Santa Maria	7/29 to 8/23	83
1939	Santa Maria	7/10 to 8/18	106
1938	Santa Maria	7/19 to 9/21	128
1938	Western Explorer	7/9 to 8/22	137

DESCRIPTION OF VESSEL AND GEAR USED

The Silver Mink, of standard shrimp trawler design (61.8 feet in length with a beam of 18.7 feet and a draft of 7.9 feet), was built in St. Augustine, Fla., in 1954. The vessel was probably one of the first of its type to be converted to tuna purse-seining. The vessel normally operates in the trawl fishery for industrial fish out of Provincetown, Mass. During the 1958 tuna purse-seining operations, the crew consisted of 8 men, of which 2 were experienced West Coast tuna-seiner captains. The principle modifications of the vessel were simple and consisted of removal of the aft gallows and the installation of an extended boom for strapping the net aboard. A purse-seine turntable was not installed, and the existing double-drum trawl winch was used as a purse winch during net-pursing operations.

The tuna purse seine was modified from standard Pacific Coast measurements to a net 310 fathoms long by 25 fathoms deep (4 strips). The body of the net was constructed of linen and cotton webbing, $4\frac{1}{4}$-inch stretched mesh (No. 36 cotton and 40/16 linen) 100 meshes per strip. The cork-line strip was 8 meshes deep (No. 60 cotton) and the lead-line strip was 50 meshes deep, 8-inch stretched mesh (No. 65/12 linen).

A large flat bottom seine skiff, 26 feet by 15 feet, powered by a 106-horsepower gasoline engine, was used in the seining operations.

Fig. 2 - Stacking the combination cotton-linen tuna purse seine furnished by the U. S. Bureau of Commercial Fisheries on the afterdeck in preparation for re-setting.

Both the purse seine and seine skiff were loaned to the Silver Mink for this cooperative commercial tuna-seining project by the U. S. Bureau of Commercial Fisheries.

FISHING RESULTS

Tuna production fishing began on August 17, 1958. The vessel had conducted three weeks of intermittent scouting prior to this time and had made two sets yielding

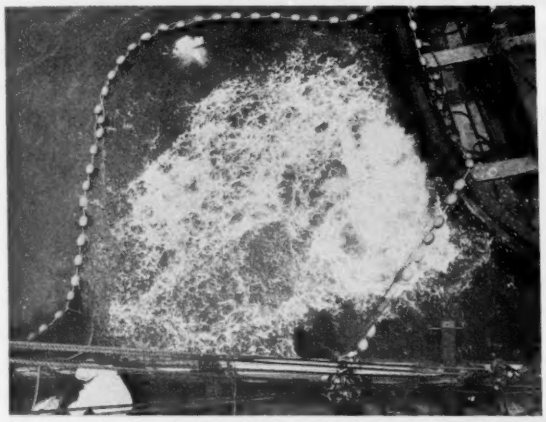


Fig. 3 - Ten tons of bluefin tuna thrashing in the bag. A total of 179.5 tons of bluefin tuna was landed by the Silver Mink during the short 1958 New England tuna season.

Fig. 4 - Brailer full of tuna is scooped from the pursed seine in waters off Cape Cod. A portion of the catch being scooped from the bag for storage aboard the seine vessel. The size range for most tuna taken was 60-80 pounds per fish.

$2\frac{1}{2}$ tons of large bluefin ranging in size from 200 to 400 pounds each. Fishing continued through October 4, 1958, at which time the Silver Mink was reconverted for otter-trawling for the winter season.

The vessel did not carry refrigeration or ice, and the majority of trips were on a daily basis, operating from the vessel's home port, Provincetown, Mass.

Summary of Fishing Log Records of M/V Silver Mink	
Period of Operation - July 24 to October 4, 1958.	
Area of Operation - Fishing was conducted in the immediate area of Cape Cod. In Cape Cod Bay, catches were made off Corn Hill, Ryders Beach, Long Point, Wood End Light, Barnstable, and Cape Cod Canal. In Massachusetts Bay, catches were made on Stellwagen Bank (Middle Bank) and the shoal ground off Cape Ann.	
Production: July 24 to August 17, 1958	2.5 tons
August 17 to October 4, 1958	177.0 tons
Total	179.5 tons
Catch (177.0) / Number of Sets (38) = Catch rate (4.66 tons/set)	
Courtesy Captain Manuel Phillips, M/V Silver Mink.	

SUMMARY

It was estimated that unsuccessful sets were made on approximately 162 tons of tuna during the entire period for one or more of the following reasons: fish under bottom of net, seine line hang-up, net ripped in mud, fish wild, ripped bag due to load, snarled seine while setting.

A number of factors must be taken into consideration when attempting to evaluate the future prospects of this type of fishing in the New England area. During the 1958 season, schooling bluefin tuna appeared late in August--approximately one month later than normal. This tendency for a later season was the characteristic pattern of other surface-schooling species of fish in the New England area. Fishermen familiar with the area reported that the abundance of schooling tuna was below that normally expected. The size of most tuna caught during the 1958 season ranged from about 60 to 80 pounds per fish. Records indicate that adverse weather

conditions (wind, storm fronts, etc.) in New England were more numerous than usual, and this reduced the periods when purse-seining could be done successfully. Man-controlled factors which tended to reduce operating efficiency were (1) the aged condition of the net, which required excessive periods of repair, and (2) a crew most of whom were inexperienced in purse-seine fishing for bluefin tuna.

Industry estimates indicate that the 1958 tuna season could have yielded at least 250 tons with adequate gear, training, and assistance by aerial spotting.

Fig. 5 - Unloading at Provincetown, Mass., after a day's fishing. Tuna were landed on a daily basis, weather permitting. Fishing in New England during 1958 again indicated that commercial tuna production can be obtained during the summer by purse-seining.

The extent of the commercial bluefin tuna resource, both inshore and offshore, available to the New England fishing industry is yet to be thoroughly evaluated.

However, a fishery contributing substantially to the New England area can be developed with the proper fishing methods. This has been demonstrated in previous years by other vessels and is again emphasized by the record production of the Silver Mink.

REFERENCES

ANDERSON, A. W. and STOLTING, W. H. and ASSOCIATES 1953. Survey of the Domestic Tuna Industry, U. S. Fish and Wildlife Service, Special Scientific Report: Fisheries No. 104 (July).

BIGELOW, HENRY B. and W. C. SCHROEDER 1953. Fishes of the Gulf of Maine, U. S. Fish and Wildlife Service Fishery Bulletin 74, pp. 338-347.

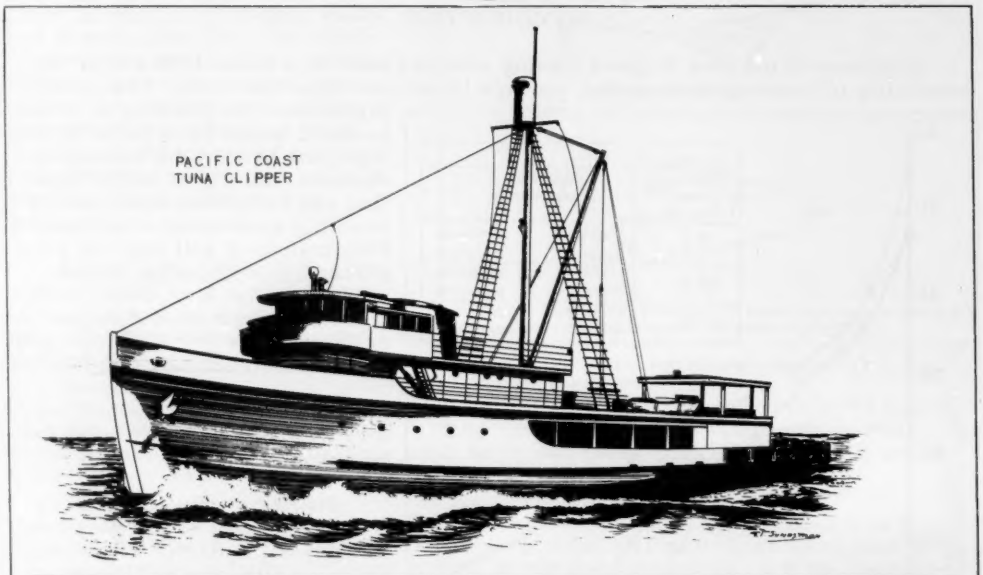
REFERENCES (CONTD.)

MURRAY, J. J.
1952. Report on 1951 Exploratory Bluefin-Tuna Fishing in the Gulf of Maine. Commercial Fisheries Review, vol. 14, no. 3 (March). Also Separate 309.

1953. Gulf of Maine Bluefin Tuna Exploration - 1952. Commercial Fisheries Review, vol. 15, no. 7 (July). Also Separate 353.

1954. Gulf of Maine Bluefin Tuna Exploration - 1953. Commercial Fisheries Review, vol. 16, no. 7 (July). Also Separate 374.

WESTMAN, J. R. and NEVILL, W. C.
1942. The Tuna Fishery of Long Island, New York. Pp. 1-31, Board of Supervisors, Nassau County, Long Island, New York (May).



TUNA CLIPPER

LENGTH IN FEET	68 TO 150
BEAM IN FEET	20 TO 32
DRAFT IN FEET	8.6 TO 15.4
NET TONNAGE	60 TO 300
CONSTRUCTION	STEEL OR WOOD
ENGINE: TYPE	DIESEL
HORSEPOWER	250 TO 1200
TYPE OF REFRIGERATION	MECHANICAL OR BRINE TANKS
CRUISING SPEED	10 TO 12 KNOTS
AVERAGE CREW	9 TO 21
LENGTH OF TRIP	35 TO 85 DAYS
CONVERTIBILITY TO OTHER TYPES OF GEAR	NONE

WEST COAST TUNA FISHING AREA

SALT CONTENT OF EVISCERATED HADDOCK FROZEN IN SODIUM-CHLORIDE BRINE

By John A. Peters*

ABSTRACT

Studies are reported on the salt content of the meat of eviscerated haddock frozen in a 23-percent sodium-chloride brine at temperatures of 5° F., 10° F., and 15° F. The results show that the commercial (quarter-nape) fillet from eviscerated haddock frozen at these temperatures contained from 0.57 to 0.70 percent salt. After the haddock had been thawed in water, the salt content of the commercial fillets obtained from the fish varied from 0.20 to 0.36 percent.

INTRODUCTION

Members of the New England fishing industry have expressed interest in the possibility of freezing eviscerated haddock in sodium-chloride brine. The advantages over the freezing of round haddock would be reduced freezing costs aboard the vessel, increased quantity of edible fish that can be landed, and reduced handling and storage costs ashore. Penetration of salt into the meat during brine-freezing, however, might be excessive, owing to the increased surface of fish that is exposed to the brine. Information on the penetration of salt into the meat of eviscerated haddock therefore must be obtained before this method of freezing can be recommended.

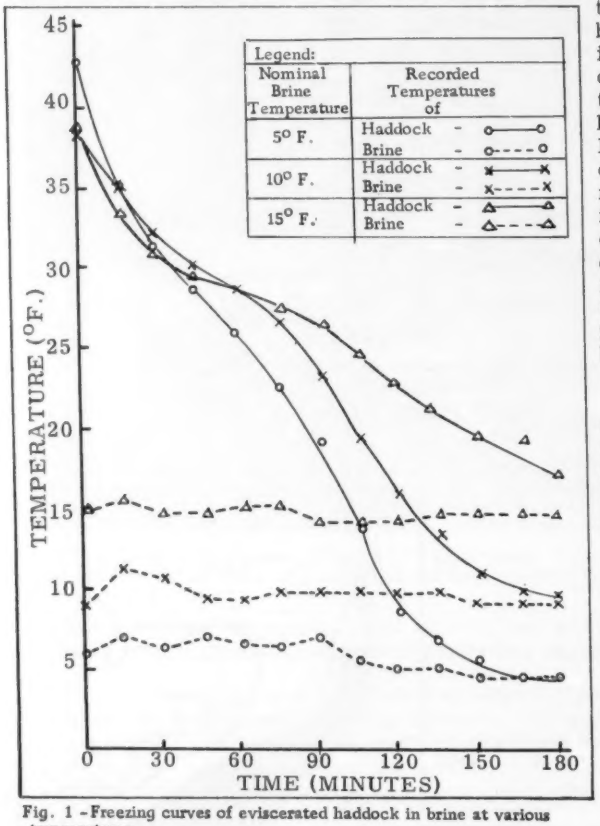


Fig. 1 - Freezing curves of eviscerated haddock in brine at various temperatures.

Studies at this Laboratory on freezing fish at sea have been concerned primarily with round fish. Holston and Pottinger (1954a and 1954b) found that when eviscerated scrod haddock were immersed in a 5° F. brine (23-percent sodium chloride) for 90 minutes, the salt content of the full-nape and quarter-nape fillets was 1.15 percent and 0.72 percent, respectively. Very little information is available, however, on the salt content of large eviscerated haddock frozen in brine at temperatures other than 5° F. or on the leaching of salt from the meat during the thawing of the fish in water prior to their filleting.

OBJECTIVES

The objectives of this study were (1) to determine the influence of various freezing temperatures on the sodium-chloride content of the edible meat of eviscerated

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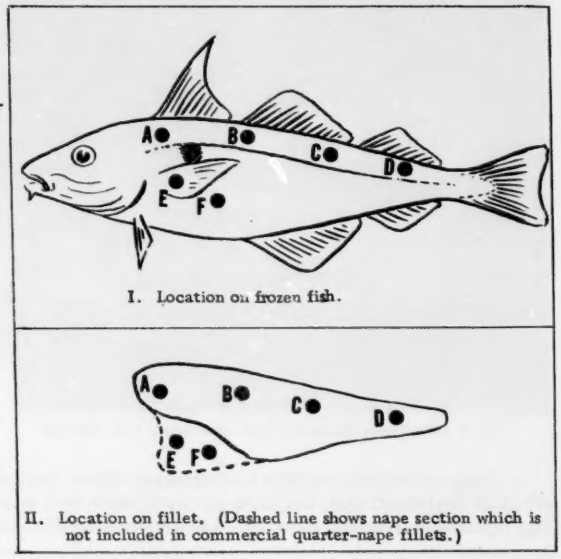
haddock frozen in a 23-percent sodium-chloride brine and (2) to determine the effect of water thawing on the sodium-chloride content of the edible meat of eviscerated haddock frozen in a 23-percent sodium-chloride brine.

EXPERIMENTAL PROCEDURES

EQUIPMENT: The freezer used in these tests consists of a galvanized steel tank with a capacity of about 100 gallons of brine. The tank is insulated with cork and covered on the outside with tongue-and-groove fir sheathing. The evaporator is made up of copper coils and is separated from the product-freezing section by a wooden baffle. The brine is circulated around the product and coils by a propeller-type mixer. A rectangular basket made of hot-dipped galvanized expanded metal is used to hold the fish during freezing.



I. Location on frozen fish.

II. Location on fillet. (Dashed line shows nape section which is not included in commercial quarter-nape fillets.)

Fig. 2 - Location of core samples taken from brine-frozen eviscerated haddock.

FREEZING THE FISH: The haddock used in this study were obtained from local line trawlers. The fish were eviscerated, washed, and heavily iced immediately after being landed on the vessel. The iced fish were transferred to the Laboratory within 24 hours of being caught; at the Laboratory, they were re-iced and stored in a chill room at 35° F. All of the fish used were not more than 48 hours out of the water and were of excellent quality.

Three 50-pound lots of fish (10 to 12 fish with an average weight of 4 to 5 pounds) were used in the study. Copper constantan thermocouples were inserted into the meat, just back of the gut cavity, of six fish in each lot, and two thermocouples were put in the brine. One lot was frozen in brine at 5° F., another in brine at 10° F., and the third in brine at 15° F.[1/] During freezing, the temperature of the fish and the brine were recorded by means of a multipoint recording potentiometer (fig. 1). All of the samples were left in the brine for 180 minutes. This freezing time was selected as being sufficient to insure complete freezing of this size of haddock at the various temperatures used and to fit best into commercial trawling operations.

SAMPLING THE HADDOCK FOR SALT DETERMINATION: Samples for determinations of salt were taken from the frozen eviscerated haddock and from full nape fillets cut from water-thawed haddock. One half of the haddock frozen at 5° F., 10° F., or 15° F. were sampled at the locations shown in figure 2-I, while the haddock were still frozen. These samples were taken by means of a rotary core sampler (fig. 3) developed at the Bureau's Seattle Laboratory (McKee 1957). The remaining fish were thawed in running water at 60° F. for 200 minutes.[2/] The thawed fish were filleted, using a full-nape cut. The fillets were sampled by means of a cork borer of the same inside diameter as the rotary sampler. The location of the samples was the same as for the frozen fish (fig. 2-II). All core samples were wrapped tightly in aluminum foil and stored at -20° F. until analyzed for salt.

1/ This range of temperatures includes those that may be encountered in commercial operations.

2/ It has been found previously (Magnusson and Hartshorne 1952) that at this time and temperature, 5-pound haddock will be sufficiently thawed to permit filleting.

SALT DETERMINATION: The skin was removed from all cores. The cores were cut to a length of $\frac{1}{2}$-inch (except for E and F from the nape section), giving samples each of which weighed approximately 2 grams. 3/ Cores E and F from the nape section were approximately $\frac{1}{4}$-inch long after the lining of the visceral cavity were removed. Each of these cores weighed about 1 gram. Determinations of salt were made on the samples (fig. 4), using the modified Volhard method of the Association of Official Agricultural Chemists (1955).

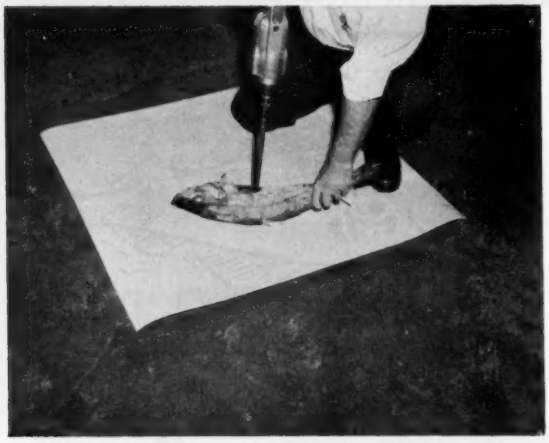


Fig. 3 - Sampling frozen haddock with rotary core sampler.

RESULTS AND DISCUSSION

Table 1 shows the average percentage of salt in the core samples from the brine-frozen eviscerated haddock and from the fillets prepared from water-thawed brine-frozen eviscerated haddock.

Data obtained at this Laboratory show that the taste threshold for salt in haddock is between 0.5 and 0.6 percent and that a salt content of 0.9 to 1.2 percent is the optimum for palatability (Holston and Pottinger 1955).

Table 1 - Average Percentage of Salt in Brine-Frozen Eviscerated Haddock 1/

Core 2/ Section	Salt Content of Fish Sampled While Still Frozen After Having Been Frozen at a Brine Temperature			Salt Content of Fillets From Fish Thawed in Water for 200 Minutes After Having Been Frozen at a Brine Temperature of		
	5° F.	10° F.	15° F.	5° F.	10° F.	15° F.
	(Percent)					
A	0.57	0.69	0.58	0.18	0.32	0.34
B	0.60	0.73	0.49	0.20	0.29	0.46
C	0.50	0.68	0.68	0.18	0.24	0.23
D	0.60	0.70	0.61	0.22	0.28	0.39
E 3/	2.26	2.83	2.85	0.48	0.66	1.45
F 3/	2.84	2.59	2.49	0.61	0.54	0.85
Average of all cores	1.23	1.37	1.28	0.31	0.39	0.62
Average of cores A, B, C, D	0.57	0.70	0.59	0.20	0.28	0.36

1/ Previous tests (Holston and Pottinger 1955) showed that the salt content of haddock should not exceed 1.2 percent for maximum acceptability, and that the natural salt content of haddock meat is between 0.14 and 0.20 percent.
2/ See figure 2 for location of core sections.
3/ These cores were located in the nape section, which is discarded in commercial practice.

The results of the salt determinations on the samples from the frozen eviscerated haddock show that the cores from the nape section contained salt in amounts well above the optimum level. The salt content of the meat used in producing the usual quarter-nape fillet was at or only slightly above the threshold level of taste.

The results of the salt determinations on the core samples taken from full-nape fillets cut from water-thawed fish show that the nape section contained salt in amounts at or above the threshold level of taste. This is because both surfaces of the thin nape section are exposed to the brine during freezing. The salt in the quarter-nape fillet from these fish had been reduced to well below

3/ Previous tests by Holston and Pottinger (1954a) showed that very little salt penetrated beyond $\frac{1}{2}$-inch into the meat.

the taste threshold level of 0.5 to 0.6 percent, however, by the thawing process. Also, the temperature of the brine in which the fish were frozen had an influence on the amount of salt remaining in the fillets after they were thawed in water; with the use of the higher brine temperature, larger amounts of salt were left in the fillets.

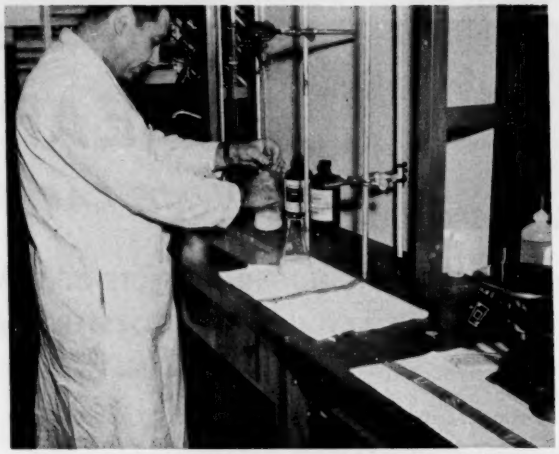


Fig. 4 - Determining salt in eviscerated brine frozen haddock.

CONCLUSIONS

(1) The meat representative of the usual commercial quarter-nape fillet from eviscerated haddock frozen in brine at 5° F., 10° F., or 15° F. and sampled while still frozen did not contain salt in excess of the optimum amount for palatability, but did contain salt in excess of the taste threshold level.

(2) The quarter-nape fillet from haddock thawed in water contained salt in amounts below the taste threshold level for salt in haddock. The amount of salt left in the meat after thawing in water increased as the temperature of the freezing medium increased.

LITERATURE CITED

ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS
1955. Official Methods of Analysis. Eighth Edition, Association of Official Agricultural Chemists, Box 540, Benjamin Franklin Station, Washington, D. C., p. 311.

HOLSTON, J., and POTTINGER, S. R.
1954a. Freezing Fish at Sea - New England. Part 8 - Some Factors Affecting the Salt (Sodium Chloride) Content of Haddock During Brine-Freezing and Water-Thawing. Commercial Fisheries Review, vol. 16, no. 8 (August), pp. 1-11. (Also Sep. No. 375.)

1954b. Some Factors Affecting the Sodium Chloride Content of Haddock During Brine Freezing and Water-Thawing. Food Technology, vol. 7, no. 9 (September), pp. 409-414.

1955. Brine Dipping of Haddock Fillets, Commercial Fisheries Review, vol. 17, no. 10 (October), pp. 21-30. (Also Sep. No. 417.)

MAGNUSSON, H. W., and HARTSHORNE, J. C.
1952. Freezing Fish at Sea - New England. Part 5 - Freezing and Thawing, Studies and Suggestions for Commercial Equipment. Commercial Fisheries Review, vol. 14, no. 12a--Supplement (December), pp. 8-23. (Also Sep. No. 328.)

McKEE, LYNN G.
1957. Frozen Tuna Sampler. Commercial Fisheries Review, vol. 19, no. 7 (July), p. 7. (Also Sep. No. 482.)

SKIN FLORA OF COD CHANGES AFTER WASHING AND ICING

Washing with running sea water decreases the count of bacteria in the skin of freshly-fished cod to a large extent, without changing the percentages of the various genera. After icing, on the other hand, bacterial counts increase and new types of bacteria appear. There has therefore been further contamination from the ice. ("Changes in the Skin Flora of Cod After Washing and Icing," by D. L. Georgala, J. Appl. Bacteriol., Great Britain, 1957, vol. 20, no. 1, pp. 23-29.)

TECHNICAL NOTE NO. 50 - EFFECTS OF TEMPERATURE AND SALINITY ON CILIARY ACTIVITY IN THE OYSTER CRASSOSTREA VIRGINICA [1/]

By Milton Fingerman*

Since cilia are an integral part of many organ systems in the oyster--reproductive, excretory, and digestive, for example--the rate of ciliary activity may reveal the over-all condition of the oyster. Two principal variables affecting the oyster are temperature and salinity. In the present work, the effect of these two variables on ciliary activity therefore was studied.

The method used was simple: determination of the time required for cilia on a gill to move a small carbon particle a measured distance.

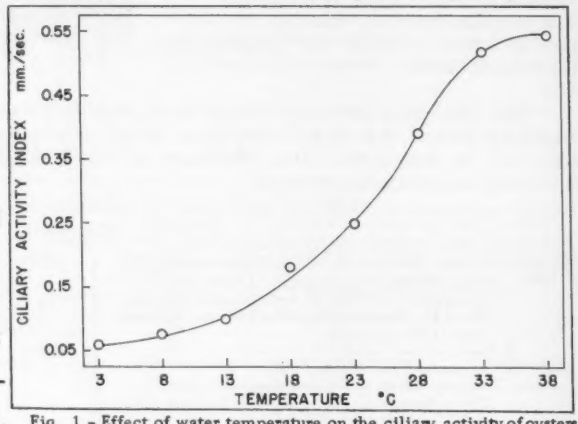


Fig. 1 - Effect of water temperature on the ciliary activity of oysters.

EFFECT OF TEMPERATURE: Since oysters are cold-blooded, their metabolic activity undoubtedly increases with temperature. In the first series of experiments, the rate of ciliary activity was determined at intervals of 5° C. (41° F.) over the range 3° C. to 38° C. (37.4° F.-100.4° F.) with oysters from which one shell had been removed. The results are shown in figure 1, where each point represents the average of 50 to 60 determinations. As is evident from the figure, ciliary activity increased appreciably with temperature. At the highest temperature studied, the rate appeared to be leveling off, as is characteristic of such processes. Presumably, the rate would have decreased with further increase in temperature, owing to inactivation of the cilia by heat.

EFFECT OF SALINITY: The aim in the second series of experiments was to determine the influence of different salinities of water upon ciliary activity. Oysters were distributed among six aquaria, each containing water with a different concentration of salt. A portion of one shell had been removed from each oyster so that the meat would be exposed directly to the water. After two hours of exposure, the rate of ciliary activity of the oysters in each aquarium was determined. The results are presented in figure 2, where each point represents the mean of 33 to 60

1/ This investigation was conducted under a contract between Tulane University and the U. S. Bureau of Commercial Fisheries. It was financed by funds made available under the provisions of P. L. 466, 83rd Congress, approved July 1, 1954, commonly called the Saltonstall-Kennedy Act.

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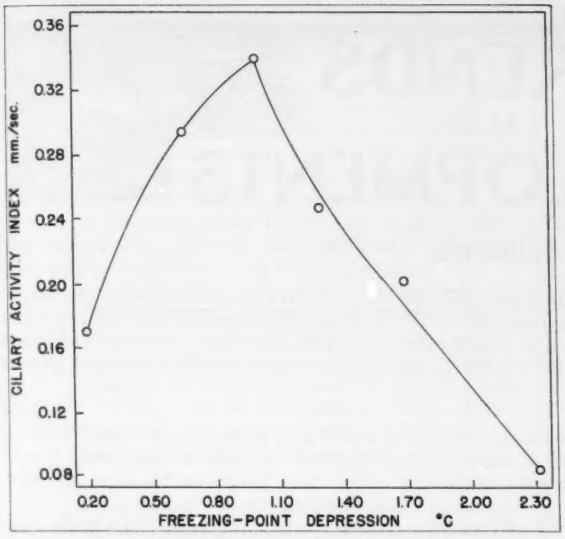


Fig. 2 - Effect of water salinity on the ciliary activity of oysters.

determinations. Ciliary activity was maximal in oysters taken from the aquarium that contained an intermediate, brackish concentration of salt. This salinity was similar to that in which the oysters had been maintained in the holding tanks and which corresponds closely to that of their natural environment.

The final series of experiments revealed that the ciliary activity of oysters taken from brackish water and placed in sea water or in distilled water decreased after an exposure of only 7.5 minutes, which shows that ciliary activity decreases rather rapidly with any change from the optimal salinity.

CONCLUSION: Both temperature and salinity profoundly affect ciliary activity in the oyster Crassostrea virginica and thus presumably affect profoundly the over-all condition of the oyster.

FISH HAVE FLEAS TOO

Like dogs and other mammals, fishes have their fleas, ticks, and other irritating pests. Scientific study of these parasites has many useful applications for the fisheries.

A fascinating recent development has been the discovery that some parasites can be used as living tags to trace fish movements. This technique is being employed to determine how many salmon born in Alaskan, Canadian, and Russian waters are caught in the Japanese high-seas fishery. The knowledge is being used to allocate fishing areas in the North Pacific.

Dermocystidium, a fungus parasite of oysters, causes many oyster deaths in Chesapeake Bay, and another fungus kills large numbers of herring in New England waters. Another parasite caused the disease that almost wiped out beds of eel grass along the Atlantic coast some years ago. Countless other parasites live on the skin or inside the bodies of all marine animals and plants. (News release Virginia Fisheries Laboratory, Gloucester Point, Va., December 1, 1958.)

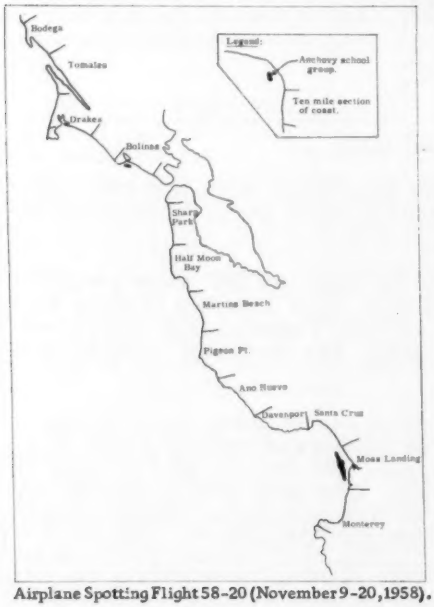
TRENDS AND DEVELOPMENTS

California

AERIAL CENSUS OF COMMERCIAL AND SPORT FISHING CONTINUED: Airplane Spotting Flight 58-19: The inshore area from Los Angeles Harbor to the Mexican border was surveyed from the air (November 7, 1958) by the California Department of Fish and Game Cessna "170" 1359D to determine the distribution and abundance of pelagic fish schools.

Although only a few well-defined schools were seen and positively identified, other signs indicated the presence of a large concentration of fish in the area surveyed. A great number of birds were in evidence from Los Angeles Harbor to the Coronado Strand; many were actively "working" and feeding; and many more were observed on the water. One school of porpoise (with birds) was observed off Oceanside and fast moving "breezing" schools of fish were seen. These "breezing" schools were numerous, but due to poor light conditions and erratic behavior of the schools, species identification was difficult.

Airplane Spotting Flight 58-20: The inshore area between Monterey and the Russian River was surveyed from the air (November 9-11, 1958) by the Department's Cessna "180" 3632C to determine the number and locations of sport fishermen, abalone pickers, Pismo clam diggers, and pelagic fish schools.



Airplane Spotting Flight 58-20 (November 9-20, 1958).

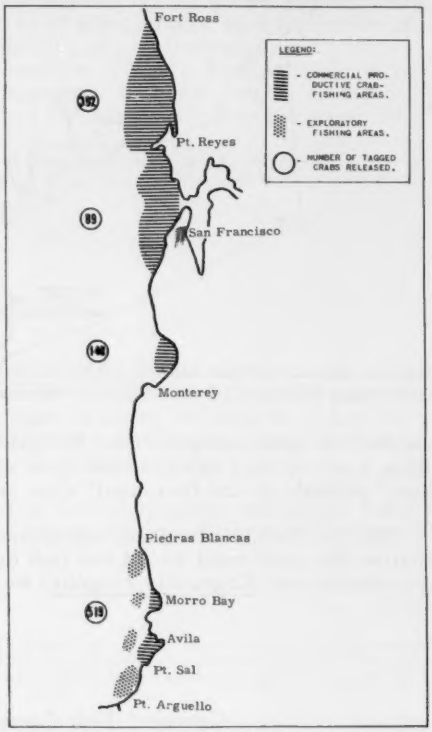
SPORT FISHERMEN: Heavy surf during this three-day period apparently discouraged surf casters as the numbers tallied dropped sharply since the previous flight early in November. The Sunday tally of shore fishermen was about five times as great as that on the following Monday. This ratio of about five to one between week-end days and week days has persisted throughout the surveys.

ABALONE AND PISMO CLAM: Counts of abalone pickers and ocean clam diggers were made on each day of the flight. Due to the lateness of the tides it was not possible to survey the area to the north of Pt. Montara. The greatest activity during the three-day low-tide period occurred on November 11 during a -1.4 low.

PELAGIC FISH: Very few schools were seen on this flight. Two factors may have been responsible: pelagic fish usually remain deep and out of vision during periods of heavy seas, and in past years pelagic fish schools have been noted to leave the inshore area during this time of the year. Several dozen anchovy schools were spotted in Monterey Bay and off Bolinas Bay.

* * * * *

DUNGENESS-CRAB DISTRIBUTION AND ABUNDANCE STUDIES CONTINUED (M/V N. B. Scofield Cruise 58S7-Crab): To conduct exploratory fishing activities in an effort to determine distribution and relative abundance of dungeness crabs (Cancer magister) in areas not normally exploited by the commercial fleet was the principal objective of the October 3-29, 1958, cruise of the N. B. Scofield, research vessel of the California Department of Fish and Game. Other objectives were (1) to tag legal crabs for migration, growth, and population studies; (2) to conduct crab fishing operations on traditional grounds to determine the preseason distribution, abundance, composition, and condition of crabs on the grounds; and (3) to collect biological and environmental data pertinent to the distribution, abundance, and availability of the dungeness crab. The California coastal waters were surveyed from Point Arguello to the vicinity of Point Arena.



N. B. Scofield Cruise (58S7-Crab) October 3-29, 1958.

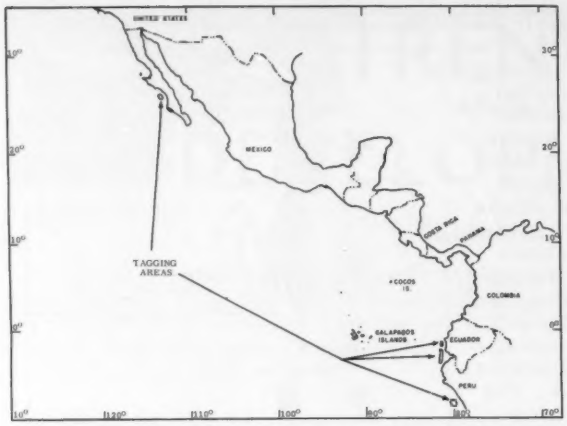
Exploratory Fishing: Exploratory tows were made with otter-trawl gear at 7 locations in the area from Piedras Blancas to Point Arguello. Crabs were taken in 3 tows. Catches ranged from 0 to 3 legal crabs per 30-minute tow. A legal crab is a male 7 inches in greatest width. Towing depths ranged from 24 to 67 fathoms. Exploratory trap sets at 8 stations from San Simeon to Pt. Arguello resulted in catches of 0.1 to 1.0 legal crabs per trap. Trap sets were made in depths ranging from 13 to 22 fathoms. Commercial concentrations of crabs were not located by exploratory fishing in these areas where commercial fishing does not normally occur.

Crab Tagging: A total of 1,140 crabs was tagged and released.

Distribution, Abundance, Composition and Condition of Crabs on the Traditional Fishing Grounds: Otter trawl tows of 30 minutes duration were made at 20 stations in commercially-productive areas. Legal crabs were caught at 13 of these 20 trawl stations.

* * * * *

YELLOWFIN AND SKIPJACK TUNA TAGGING STUDIES CONTINUED (M/V Valiant Cruise 58C3-Tuna): The coasts of Baja California, Ecuador, and Peru were surveyed by biologists of the California Department of Fish and Game who accompanied the M/V Valiant from San Diego on August 21-November 25, 1958. During the cruise 283 yellowfin and 1,360 skipjack were tagged and released. The objectives were: (1) to study, by tagging techniques, the migrations, rates of growth, and other salient features of the eastern Pacific yellowfin tuna and skipjack populations; (2) make routine oceanographic observations that may be related to the occurrence of tuna; (3) obtain biological and other information concerning tuna schooling habits by sampling the size and species composition of individual schools; and (4) to collect and identify marine organisms associated with the tuna.



Tuna-tagging cruise (58C3-Tuna), August 21-November 25, 1958.

Five skipjack and 1 yellowfin tuna tagged on this cruise were recovered before the trip was completed. Two of the skipjack, tagged in the Gulf of Guayaquil were recovered at the same locality 10 minutes and 16 days, respectively, after tagging. The other 4 recovered "tunas" were tagged and recaptured at the 14-Fathom Bank, Peru, within 3 to 5 days of the time they were released.

Oceanographic observations were logged daily. Sea surface temperatures on the fishing grounds ranged from 63.6° to 75.9° F.

Ten "tuna" schools (7 skipjack and 3 yellowfin tuna) were sampled for size composition. Length-frequency samples indicated that individuals within a school are fairly uniform in size. Observations, however, revealed that "tuna" schools in the Guayaquil area contained individuals ranging from 4 to 60 pounds.

The California tuna fleet experienced great difficulty in obtaining bait off Peru because the gear used would not fish deep enough. As a result, bait (almost exclusively anchovies, Engraulis ringens) was usually purchased from native fishermen.

Canned Fish Consumer Purchases Report

As part of a broad marketing research program to improve and expand markets for canned tuna, canned salmon, and canned Maine sardines, the Market Research Corporation of America, under a contract with the U. S. Bureau of Commercial Fisheries, is collecting data on household consumer purchases of these canned fish. Total national purchases are projected from information supplied by a nationwide consumer panel of approximately 6,000 families representing 22,000 persons. Data are being gathered for one year and the findings for October-November 1958 have now been published in a report titled Canned Fish Consumer Purchases, which will be issued monthly through September 1959.

The report gives these data for each of the three products: total purchases, number of families buying, average purchase, and average price paid. Also the data are shown by species or style of pack for the United States, by regions, and by outlet groups (chains, independents, and other stores).

The findings of this survey will be published monthly. A final twelve-months report will contain in addition to most of the monthly information, data by city-size location, income groups, education of head of household, size of family, age of housewife, presence of children by age groups, and employment status of housewife.

Some of the findings for November 1958:

Canned tuna purchases in November were 769,000 cases (48 No. 1/2 cans) of which 49,000 cases were imported. By type of pack, domestic-packed tuna purchases were 173,000 cases solid, 461,000 cases chunk, and 86,000 cases grated or flakes. The average purchase was 1.8 cans at a time. Only 26.7 percent of the households bought all types of canned tuna; only 1.9 percent bought the imported product. The average retail price paid for a 7-oz. can of domestic solid or fancy was 35.6 cents and for a 6-1/2-oz. can of chunk 29.1 cents. Imported solid or fancy was bought at 30.2 cents a can. November purchases were somewhat less than the 816,000 cases bought in October.

During October and November 1958, consumer purchases of Maine sardines were greater through the independent outlets than through the chain outlets. Canned sardine purchases in November were 139,000 cases, of which 69,000 cases were Maine (100 1/4-drawn cans), 29,000 cases (48 1-lb. cans) California, and 41,000 cases (100 1/4-drawn cans) imported. The average purchase was 2.1 cans at a time for all sardines, but 2.4 cans for Maine, 1.6 cans for California, and 1.7 cans for imported. Only 7.2 percent of the households bought all types of canned sardines; 4.0 percent bought Maine, 1.3 percent California, and 2.4 percent imported. The average retail price paid for a 4-oz. can of Maine sardines in oil was 11.1 cents, for a one-pound can of California 26.4 cents, and for a 4-oz. can of imported 27.1 cents. November purchases were somewhat less than the 141,000 cases bought in October.

Canned salmon purchases in November 1958 were 269,000 standard cases, of which 153,000 cases were pinks and 51,000 cases reds. The average purchase was 1.3 cans at a time. Only 16.5 percent of the households bought all types of canned salmon; 8.7 percent bought pinks. The average retail price paid for a 1-lb. can of pink was 56 cents, and for red 84.6 cents. November purchases were somewhat less than the 282,000 cases bought in October.

Cans--Shipments for Fishery Products, January-October 1958

Total shipments of metal cans during January-October 1958 amounted to 108,190 short tons of steel (based on the amount of steel consumed in the manufacture of cans) as compared with 103,025 tons in the first ten months of 1957. Fish canning in October for salmon and Maine sardines was about over for the season, but tuna, Gulf shrimp, and California sardine packing was at a high level.

Note: Statistics cover all commercial and captive plants known to be producing metal cans. Reported in base boxes of steel consumed in the manufacture of cans, the data for fishery products are converted to tons of steel by using the factor: 23.0 base boxes of steel equal one short ton of steel.

Clams

SELECTIVE BREEDING INCREASES GROWTH RATE: At eight months of age the second generation of clams selectively bred for rapid growth were 34 percent larger than the normal population of the same age. This is the finding of the Milford (Conn.) Biological Laboratory of the U. S. Bureau of Commercial Fisheries, which is attempting to develop faster-growing clam populations.

The biologists plan to produce seed clams in the laboratory, transplant them to outdoor tanks or pools, and when they are approximately $\frac{3}{4}$-inch long to retransplant them to marine beds.

* * * * *

YOUNG REARED IN CONCRETE TANKS: Young clams are being raised in concrete tanks by a commercial shellfish firm on the Eastern Shore of Virginia. Each tank is about 60 feet long, 10 feet wide, and 18 inches deep and rests on a clay bottom which, in turn, is covered with a layer of sand. Young clams for the tanks and food for the clams will be provided by greenhouses, incubators, and a place for culturing larval clams, according to the owner of the firm. During the summer of 1958, about a half million clams were produced at the Watts Bay establishment near Atlantic, Va. When the clams have reached a proper size to survive most predation, it is proposed to replant them on growing grounds until they reach market size.

A member of the firm studied methods for spawning clams artificially and caring for the larvae at the U. S. Bureau of Commercial Fisheries Marine Biological Laboratory at Milford, Conn.

Virginia State biologists believe planters may find it profitable to culture seed clams. Hybrids produced by the Bureau's Milford Laboratory by crossing northern and southern parents have been under study by Virginia biologists for several years. it is within the realm of possibility that a stock of rapid-growing clams can be supplied to planters and the key to supplying such seed clams may be in tank culture. (Virginia Fisheries Laboratory, Gloucester Point, news release, December 5, (1958.)

Crabs

CHESAPEAKE BAY ABUNDANCE PREDICTED FOR 1958/59 WINTER: The blue crab dredge boats during December 1958 in lower Chesapeake Bay were catching the 30-barrel daily boat limit. This substantiates the prediction made in the fall of 1958 by a biologist of the Virginia Fisheries Laboratory (Gloucester Point, Va.) that blue crabs would be abundant the winter of 1958/59.

Although crabs are abundant and should continue to be plentiful in the spring and early summer of 1959, the crab-pot catch will decrease in August 1959 and will continue poor through fall, the biologist stated. The 1959/60 dredge fishery for crabs will be very poor, he added. Scientists have observed that crabs hatched in the summer of 1958 were very scarce, and calculate the fishery will begin to feel the effects of this poor crop by late 1959.

"Reliable predictions of how many crabs will be available to fishermen are valuable to crabbers and producers alike," said the biologist, "for if fishermen know that crabs will be scarce they may elect to spend their time in another fishery, catching oysters or seining, for instance, rather than crab fishing. If dealers know that few crabs will be available six months before the scarcity occurs, they may hold crab meat in storage and profit by a better market, or may seek a supply from southern waters."

The blue crab is Virginia's second most valuable fishery, topped only by oysters and occasionally by menhaden. From being an insignificant fishery in 1880 it expanded rapidly in the early 1900's, and during the past 25 years produced an average of 31 million pounds of live crabs annually. In 1950, the best year for the industry, about 50 million pounds were caught, and since 1948 annual landings have exceeded 40 million pounds five times.

Marketing blue crabs today is quite different from practices in the 1880's. Then, crabs were shipped alive to Atlantic coastal cities only, and could not be successfully handled in hot weather for lack of refrigeration and rapid transportation. Today most hard crabs are steamed and the meat picked out in modern, sanitary plants. Crab meat, live and frozen soft crabs, live and cooked hard crabs are shipped to markets near and far in refrigerated trucks.

When supplies are heavy and market prices depressed, crab meat may be refrigerated, frozen, or pasteurized. Storage by such methods can provide a steady supply at all seasons. Fresh crab meat continues to dominate the market, but quick-frozen crab patties and deviled crabs are increasing in popularity.

As a result of the abundant supply in December 1958, fishermen received about $4.00 a barrel and many decided to stay in port until prices advanced to about $6.00. Usually, half the crabs taken in the winter fishery are caught during December.

Federal Purchases of Fishery Products

DEPARTMENT OF DEFENSE PURCHASES, JANUARY-NOVEMBER 1958: Fresh and Frozen Fishery Products: For the use of the Armed Forces under the Department of Defense, 1.5 million pounds (value $908,000) of fresh and frozen fishery

Table 1 - Fresh and Frozen Fishery Products Purchased by Military Subsistence Market Centers, March 1958 with Comparisons

QUANTITY				VALUE			
November		Jan.-Nov.		November		Jan.-Nov.	
1958	1957	1958	1957	1958	1957	1958	1957
(1,000 Lbs.)				($1,000)			
1,499	1,372	20,881	21,696	908	686	1/	11,177

1/ Values for first 11 months of 1958 unavailable.

products were purchased in November 1958 by the Military Subsistence Market Centers. The quantity purchased in October was down 0.5 percent from the preceding month, but 9.3 percent above the amount purchased in the same month of 1957. The value of the purchases in November 1958 was higher by 32.4 percent as compared with November 1957.

For the first 11 months of 1958 purchases totaled 20.9 million pounds, a decrease of 3.8 percent in quantity.

Prices paid for fresh and frozen fishery products by the Department of Defense in November 1958 averaged 60.6 cents a pound, about 10.6 cents a pound above the 50 cents paid during November 1957.

Table 2 - Canned Fishery Products Purchased by Military Subsistence Market Centers, November 1958 with Comparisons

Product	QUANTITY				VALUE
	November		Jan.-Nov.		November
	1958	1957	1958	1957	1958
	(1,000 Lbs.)				$1,000
Tuna	1,035	339	4,966	2,221	542
Salmon	553	835	3,336	3,111	341
Sardine	18	68	111	193	6

Canned Fishery Products: Salmon and tuna were the principal canned fishery products purchased for the use of the Armed Forces during November. Canned tuna purchases for the first 11 months of 1958 were up 123.6 percent and salmon up 7.2 percent but canned sardine purchases were lower by 42.5 percent from the comparable period of 1957.

Note: Armed Forces Installations generally make some local purchases not included in the data given; actual total purchases are higher than indicated, because it is not possible to obtain local purchases.

Fisheries Loan Fund

LOANS THROUGH DECEMBER 31, 1958: As of December 31, 1958, a total of 514 applications for fisheries loans totaling $17,780,883 had been received. Of these 278 ($7,176,756) have been approved, 169 ($4,987,770) have been declined, 38 ($1,634,126) have been withdrawn, and 29 ($3,058,761) are pending. As several of the pending cases have been deferred indefinitely at the request of the applicants and collections have been increasing, sufficient funds have been available to process all applications when received. Funds are expected to be available to assure prompt handling of new applications. The Fisheries Loan Fund has been in operation for a little over two years.

The following loans have been approved between October 20, 1958, and December 31, 1958:

New England and Middle Atlantic Area: U. S. Trawler One, Inc., Yonkers, N. Y., $62,000; U. S. Trawler Two, Inc., Yonkers, N. Y., $63,000; Edward M. Schall, Jr., Point Pleasant, N. J., $6,559; Joseph S. Randazza, Gloucester, Mass., $25,000.

South Atlantic and Gulf Area: Irven J. Lafont, Golden Meadow, La., $16,940.

California: Trygve Hamlot, Cupertino, $10,000; Slavko Ivanic, San Pedro, $20,000.

Pacific Northwest: Ragnar Nergaard, Seattle, Wash., $12,000; Roland E. Berger, Orchards, Wash., $5,000; Aage Hammer, Westport, Wash., $2,200; Clayton C. Howe, Anacortes, Wash., $2,500; George W. Krubeck, Longview, Wash., $2,900; Lars Pedersen, Bellingham, Wash., $6,000; Stanley F. Buginnis, Gig Harbor, Wash., $2,500.

Note: See Commercial Fisheries Review, December 1958 p. 35, November 1958 p. 35, September 1958 p. 35, July 1958 p. 24, and March 1958 p. 31.

Fish-Cookery Demonstrations

More than 100 fish-cookery demonstrations will be made this spring by U. S. Bureau of Commercial Fisheries home economists and fishery marketing specialists. Already this schedule includes 14 states, and additional demonstrations are expected.

These demonstrations will be given for school lunch, Extension Service, and restaurant personnel; college and university students; Navy Cooks and Bakers School; seafood merchandising clinics; stewards and caterers meetings; and home economists, dietitians, and homemakers.

Typical fish-cookery demonstration by a home economist of the U. S. Bureau of Commercial Fisheries.

The Bureau's home economists will present appetizing, economical, nutritious, and easy-to-prepare fish and shellfish dishes. Six recipes will be prepared, garnished, and served attractively, and menus including these recipes will be suggested. Large-quantity recipes will be demonstrated for institutional, restaurant, and school-lunch personnel. Family-size recipes will be demonstrated for Extension Service personnel, students, and homemakers. The purpose of these demonstrations is to show the proper preparation of fish and shellfish as well as to educate the public to use the wide variety of fish and shellfish available. Each demonstration also will include information on market forms, nutritive value, and care and storage of fish and shellfish.

To date, the Bureau has scheduled demonstrations in Alaska (2), California (20), Idaho (8), Maryland (3), Massachusetts (14), New York (7), Ohio (1), Oregon (3), Pennsylvania (11), Rhode Island (1), Tennessee (20), Virginia (1), Washington (1), Wisconsin (3).

Fishery Landings at Boston Down Again in 1958

Fishery landings at the Boston Fish Pier in 1958 continued their downward trend. A record-low volume brought higher ex-vessel prices. Haddock scarcity on the fishing grounds was the most serious problem the past year. But ever-present were the old headaches--fewer vessels, higher operating costs, record-high foreign imports, and apparently limited capital. There are no definite prospects that any of these problems will be solved in 1959.

Boston's fishermen and fishing vessels operated at peak capacity in 1958. The offshore fishermen made more trips with the fewer aging large trawlers. But generally the results were poor. Boston's medium trawlers also worked to capacity, and fewer medium trawlers from other ports landed trips in that port. The average age of all Boston fishing vessels is now close to 20 years.

Total landings at the Fish Pier in 1958 amounted to only 123.8 million pounds, the lowest in 36 years, or since 1922. The 1958 landings were 11.8 million pounds less than the 1957 total of 135.6 million pounds.

There were 829 trips by large trawlers at Boston in 1958, 1,288 by medium trawlers, and 303 by smaller vessels. The 1957 totals were 812, 1,334, and 311, respectively.

One bright note in the Boston fishery scene in 1958 was the higher value of the fish landed. The total value was $12.6 million, compared with $11.2 million in 1957. In 1945-54 the average annual value was $14.0 million. The 1958 average ex-vessel price of 10.2¢ a pound was 2.0¢ a pound higher than the previous year. Ex-vessel prices were very high the last half of 1958.

Unloading a small trawler at low tide at Boston Fish Pier.

The higher value for fish at the caplog brought some relief to vessels and fishermen, and generally they had a better year than 1957. But the higher cost of raw material further squeezed processing plants, which have been hard-pressed after a number of poor years. The plants are equipped to process large volumes of frozen fillets, but the 1958 ex-vessel prices precluded this during most of the year.

Haddock continued as the leading species landed by the Boston fleet. In 1958 the catch of haddock was only 81.5 million pounds, a drop of 12.3 million pounds from the previous year. The greatest decline was in the smaller or scrod haddock. Cod and flounder landings were also lighter at Boston in 1958. Pollock was the only species to increase in volume, due to very good fishing the last two months of the year.

Imports of groundfish fillets into the United States--the leading foreign competition for Boston's haddock fishery--reached a new high in 1958. An estimated 145 million pounds were brought to this country from abroad, 4 million pounds above the previous record received in 1957. Canada continued as the leading supplier of foreign groundfish fillets, but in 1958 shipments also arrived from Iceland, Norway, Denmark, United Kingdom, Netherlands, France, West Germany, Japan, Greenland, Miquelon & St. Pierre, and South Africa. More and more foreign countries are sending groundfish fillets to the lucrative United States market, while Boston's share of the market has dwindled each year.

Leaders in Boston fisheries once again were unsuccessful in getting the financial aid they sought from the Federal government for new vessels, plant improvements, etc.

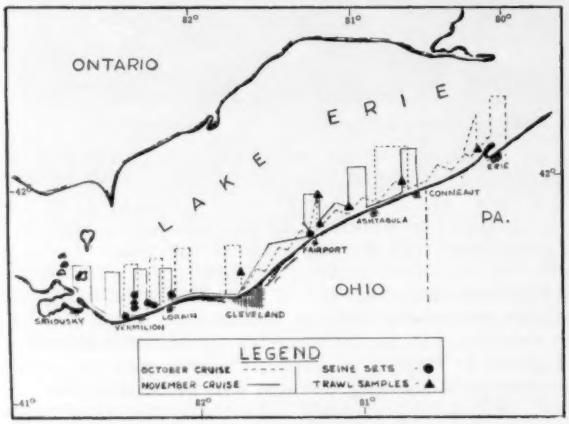
Only very few new vessels have been added to Boston's fishing fleet since World War II. The situation has now become critical. Investment capital apparently is lacking due to the generally poor prospects. However, in 1958 a group of Boston fishery leaders proposed a plan to construct a number of vessels. Financial

aid was sought from all sources--vessel owners, processors, wholesalers, and others. Initial response was good and some relief might be forthcoming from this source in the future.

--John J. O'Brien, Supervisory Market News Reporter, Market News Service, Division of Industrial Research and Services, U. S. Bureau of Commercial Fisheries, Boston, Mass.

Great Lakes Fisheries Exploration and Gear Research

EXPERIMENTAL SMELT FISHING WITH LAMPARA SEINES CONTINUED (M/V Thelma H. Cruise 2): The second exploratory fishing cruise (November 1-28, 1958) in the American waters of Lake Erie was made by the U. S. Bureau of Commercial Fisheries chartered vessel Thelma H. Aimed at locating and determining the availability of smelt to seine gear during the fall months, fishing operations were conducted between Conneaut, Ohio and the islands of Western Lake Erie.



M/V Thelma H. Cruise 2 (November 1-28, 1958).

As in the previous cruise, the offshore Ohio waters were systematically scouted and sounded with a Bendix DR-16 recorder. Few surface or close-to-the-surface schools of fish were observed. Three sets with a 100-fathom long lampara seine in 40- to 50-foot depths off Vermilion, Ohio, took only trace amounts of adult and young-of-the-year smelt and emerald shiners. Two similar sets off Lorain took the same species in trace amounts. It was apparent from specimens taken that individual fish were of a size too small for the mesh size in use. A total of 9 seine stations was made. Night-fishing efforts to attract schools to lights were unsuccessful.

Relatively large concentrations of fish were noted over most of the area. Samples from these schools taken with a 16-foot trawl at Vermilion, Fairport, Ashtabula, and Conneaut, Ohio, were identified as yellow perch, adult smelt, and emerald shiner. Water temperatures ranged from 52° F. in early November to 41° F. at the end of the cruise. With the gradual cooling of the lake waters, young-of-the-year smelt and shiners began to show close to the surface during short periods of calm weather.

Generally poor weather conditions permitted fishing operations only about one-half of the cruise. Hazardous snow and ice formations on the vessel forced termination of the cruise three days ahead of schedule. The experimental seining work is scheduled to continue about March 15, 1959.

Note: Also see Commercial Fisheries Review, January 1959, p. 33.

Great Lakes Fishery Investigations

WESTERN LAKE SUPERIOR HERRING AND WHITE FISH SPAWNING SURVEY (M/V Siscowet Cruise 7A and 8): The lake herring investigation was continued in the Apostle Island area of Lake Superior by the U. S. Bureau of Commercial Fisheries research vessel Siscowet during cruise 8 (November 24-December 5, 1958). Gill nets and/or trawls were fished at three stations: (1) south of Stockton Island, (2) northwest of Madeline Island, and (3) northeast of Sand Island. Sweeps were made with a fish-magnifying fathometer over large areas among the Apostle Islands. Although high winds and subzero temperatures restricted operations, valuable data were collected relative to lake herring concentrations during the spawning season in the island area.

The fish-magnifying fathometer indicated heavy concentrations of herring in all waters visited during the cruise. In some areas, south of Stockton Island, concentrations appeared as scattered schools in a zone from 5 fathoms below the surface to about 3 fathoms off the bottom. The depth in this area ranged from 30 to 50 fathoms. In areas less than 30 fathoms deep, northwest of Madeline and northeast of Sand Islands concentrations appeared as tight schools from 10 fathoms to the bottom.

On November 24, three gill nets (2-, $2\frac{1}{4}$, and $2\frac{1}{2}$-inch mesh) were set in 50 fathoms south of Stockton Island. This set caught 208 herring and 350 chubs. The herring averaged 7 ounces in weight. About 50 percent of both the herring and chubs were ripe.

Three gill nets (1, $2\frac{1}{4}$- and 2, $2\frac{1}{2}$-inch mesh) were set in 27 fathoms northwest of Madeline Island on December 1. These nets took 80 herring and 33 chubs. The herring also averaged 7 ounces each and 90 percent of them were ripe. None of the chubs were ripe.

Trawl tows were made in the area northeast of Sand Island to capture fish which appeared just off the bottom on the fish-magnifier. It was assumed that these fish were herring as commercial nets set in the immediate area were taking up to 12 tons a lift. A 35-foot semi-balloon trawl towed in this region for 15 minutes at approximately 4 miles an hour at 25 fathoms caught 1 herring. A second 15-minute tow in the same area but at a slower speed ($2\frac{1}{2}$ miles an hour) took 2 herring, 13 chubs, and 96 smelt. It was concluded that the first tow was either fishing improperly or was not on the bottom. In either case the catches of herring indicate that fish appearing near the bottom were not herring or that the herring were able to escape the trawl.

Plans include trawling at night but severe weather conditions made it impossible.

During this cruise surface temperatures ranged from 37.2° F. among the islands to 42.6° F. on the open lake. Bottom temperatures in all areas remained at about 40° F. Cruise 8 concluded the operations of the Siscowet for the 1958 season.

A 4-day nonscheduled cruise (7a) was conducted from November 10-13, inclusive, to establish the time and place of whitefish spawning.

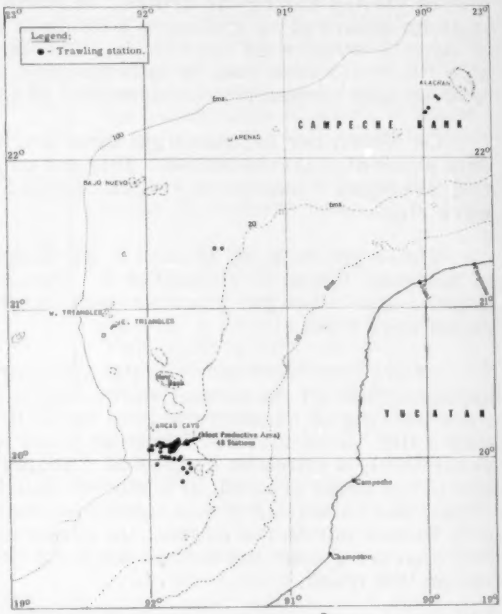
Eight gill nets, ranging from $2\frac{1}{2}$- to 6-inch mesh were set in waters just north of Rocky Island at depths ranging from 3 to 6 fathoms. The bottom was clearly visible and consisted of boulders from the size of golf balls up to 4 feet in diameter. The total catch from 2 gill-net sets made in this area was: 17 whitefish, 2 menominee whitefish, 227 herring, 28 longnose suckers, and 1 lake trout. The whitefish averaged 3 pounds each and were all ripe males. No female whitefish were taken. The herring were all taken in the 2-inch mesh and averaged 12 ounces each.

Stomachs from the herring and a large number of menominee whitefish caught by a commercial fisherman in the area were examined for possible predation on whitefish eggs. Eggs were found in the stomach of one menominee which were tentatively identified as either whitefish or menominee eggs. Many of the menominee whitefish examined were ripe.

Gulf Exploratory Fishery Program

DISTRIBUTION AND AVAILABILITY STUDIES OF BOTTOM FISH IN GULF OF MEXICO CONTINUED (M/V Silver Bay Cruise 12): Commercial quantities of red snapper (Lutianus sp.) were taken on Campeche Bank during a 21-day experimental trawling trip (completed December 4, 1958) by the U. S. Bureau of Commercial Fisheries chartered exploratory fishing vessel Silver Bay.

Best fishing was encountered on the broken bottom south and southeast of Cay Arcas in 23-35 fathoms at 20° 05' north latitude and 19°51' west longitude. Approximately 90 percent of the total marketable catch of 22,973 pounds of snapper and grouper was taken during 11 days of trawling operations in this area. Catches averaged approximately 1,800 pounds of marketable snapper and grouper per 12-hour day, with catches ranging from 150 to 1,050 pounds per 90-minute tow. The total snapper and grouper catch of 24,233 pounds was comprised of 7 species of snapper and 3 species of grouper.



M/V Silver Bay Cruise No. 12 (November 13 to December 4, 1958).

The catch was composed of approximately 35 percent large (10 pounds and over), 19 percent medium (5 to 10 pounds) and 45 percent small fish ($\frac{1}{2}$ to 5 pounds). Negligible amounts of very small snapper and scrap fish were taken due to the use of a $5\frac{1}{2}$-inch mesh cod end, though the vessel's electronic fish finders continually indicated dense shoals of bottom fish in most of the areas fished. These tracings were verified as concentrations of scrap fish by the intermittent use of a 2-inch mesh liner inserted in the cod end. Juvenile snapper were absent inside of 30 fathoms.

Modified "New England" type fish trawls were used throughout the trip. The trawls were constructed from $\frac{3}{16}$-inch diameter braided nylon cord, $4\frac{1}{2}$-inch stretched mesh in the body and $5\frac{1}{2}$-inch stretched mesh in the cod end. The foot rope was fished its entire length with 20-inch diameter wooden rollers. Standard V-D rig was used with twenty fathoms of ground cables between the doors and the wing tip. An "Exocet" rising panel device was used on the headline in conjunction with standard trawl plane floats. Preliminary trials with this device, which is designed to insure maximum vertical opening of the trawl mouth at high towing speeds, indicated superior effectiveness.

Though rough and broken bottom was prevalent in the areas fished, the operation of the gear was highly successful. Only occasional minor tears occurred throughout the trip.

Note: Also see Commercial Fisheries Review, November 1958, p. 38.

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UNDERWATER TELEVISION OBSERVATIONS OF RED SNAPPER REACTIONS TO FISH TRAPS (M/V Oregon Cruise 54): Film recordings of underwater television observations of the reactions of red snapper to various designs of fish traps were made by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel Oregon during a cruise in the Gulf of Mexico from November 11 to December 8, 1958. A total of 900 feet of film was recorded of 14 trap sets.

The Bureau's exploratory fishing vessel Oregon.

Nine trap sets were made to test the effects of various arrangements of pliable, clear plastic strips in the trap entrance. During these observations it was possible to adjust these strips to form a cone extending into the trap. It was observed that red snapper would readily enter the trap and that the closed ends of the plastic strips served to prevent escapement.

A burlap-covered trap was tested but this covering reduced the light below the level needed for observations. Another variation using nylon webbing covering one side of the trap was unsuccessful since the fish became wild as the trap was lifted and broke through the webbing.

A combination of excellent water conditions for underwater television observations and concentrations of red snapper was located near Cay Arenas in 31 to 35 fathoms at 22°10' north latitude and 91°20' west longitude. Concentrations of red snapper were found south of Cay Arcas in 21 to 25½ fathoms; however, the presence of a 10-15 foot layer of turbid water over the bottom limited observations. In other more shallow areas south of Arcas where water clarity was good, no red snapper were found.

Maine Sardines

FISHERY FEATURED IN COMIC STRIP: Maine's sardine fishery was featured in a half-page colored comic strip in 90 metropolitan Sunday newspapers in January 1959. Some 40 million people read about the adventures of "Smokey the Bear," "Little Smokey," and "Specs," the fictitious characters created by a cartoonist. The Council collaborated with the producers of the widely-syndicated cartoon strip in development of the idea and the script.

The series of drawings depicts Smokey taking his pals on a tour of the sardine fishery and explaining the many interesting phases of the operations.

"We are fortunate to have such a nice and popular way to bring our industry and its products to the attention of the Nation." the Maine Sardine Council's Executive Secretary stated.

* * * * *

INCLUDED ON GIRL SCOUT NATIONAL ROUNDUP MENU: Canned sardines from Maine will be featured on the menu of the National Roundup of the Girl Scouts of America to be held at Colorado Springs, Colo., in July 1959.

The Maine Sardine Council Chairman announced on December 10, 1958, that the industry's product would be served twice as the luncheon staple to the 10,000 girls from 8 to 18 who will attend the nine-day camp-out.

The Council is cooperating with the National Girl Scout Organization on the same basis as it did with the Boy Scouts of America when 50,000 youthful campers ate and enjoyed Sardines from Maine at the 1957 Jamboree at Valley Forge, Pa.

The Council will donate 10,000 cans of sardines while the Girl Scout Organization will reciprocate by means of surveys, publicity, promotion, and other activities.

"We are not only helping the good cause of scouting but are also getting an opportunity to expose our industry's product to a cross-section of America's future homemakers," the Council Chairman stated.

Present plans are to serve the sardines for luncheon on two successive Fridays and the Girl Scout food experts are now working out suitable recipes.

The Sardine Council has a number of other plans for the event.

* * * * *

PACK FOR 1958 UNDER TWO MILLION CASES: Preliminary figures on the Maine canned sardine pack for the 1958 season, which closed December 1, 1958, indicates a pack just short of 2 million cases.

The Maine Sardine Industry Executive Secretary said that the total was about 120,000 cases less than the 1957 output and well below the average for the past ten years. The 1957 pack was 2,177,151 standard cases.

He said that the comparatively light pack combined with a good sales and inventory position had resulted in a favorable outlook for the canners to profitably move all stocks to market before the actual start of 1959 canning operations in late May (season opens April 15). He also predicted that shortages are very likely to occur in some areas of the country by early spring.

Industry sales for the first eleven months of 1958 were up 200,000 cases over the same period in 1957 while packers' inventories on December 1, 1958, were 200,000 cases less than a year earlier.

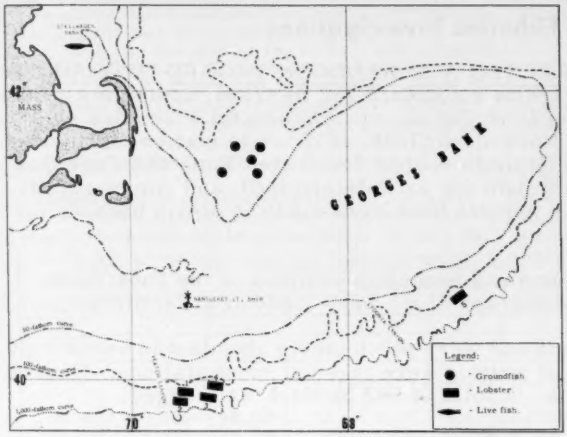
"Any shortages will most likely occur in standard keyless types as there is less than five months' supply available under ordinary selling conditions," the Executive Secretary stated.

Furthermore, he reported, consumer sales of all Maine sardines have shown a constant monthly gain for more than a year.

Thirty plants operated in 1958 with the bulk of the pack made in the Western and Central areas of the Maine coast. Sizable fish runs failed to materialize in Washington County and Bay of Fundy waters for the fifth year in a row.

North Atlantic Fisheries Exploration and Gear Research

DEEP-WATER LOBSTER ABUNDANCE RESURVEYED AND HERRING EGGS AND LARVAE COLLECTED OFF NEW ENGLAND COAST (M/V Delaware Cruise 58-7): Approximately 2,740 pounds of lobsters (Homarus americanus) were taken by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel Delaware in only 5 tows in depths of 150 to 300 fathoms off the New England coast. This cruise was made (December 10-20, 1958) to check the abundance of these deep-sea lobsters in areas previously explored during 1956/57. The areas explored included those which had previously shown excellent concentrations of lobsters.



M/V Delaware Cruise 58-7 (December 10-20, 1958).

A standard no. 41 otter trawl (79' headrope, 100' footrope) with 45' of rollers was used on all tows, and no obstructions or gear damage was encountered.

The estimated average weight was 4 pounds per lobster, and the total catch consisted of 685 lobsters. Approximately 500 pounds of egg-bearing lobsters were kept alive in the Delaware's 5,000-gallon sea-water tank and were turned over to the State of Massachusetts for hatchery stock at Martha's Vineyard.

In cooperation with the Maine Herring Investigations, plankton samples and temperature casts were made at selected locations to gather further information on the distribution of herring eggs and larvae in the offshore areas. Eleven plankton stations were occupied during the cruise, and 132 drift bottles were released to assist in mapping current flow in the areas important to herring spawning.

In addition, a number of live haddock and cod were trawled on the west side of Stellwagen Bank and were brought alive to East Boston. Technological protein-analysis tests will be run on these fish.

* * * * *

TUNA FISHING EXPLORATIONS IN NORTH ATLANTIC CONTINUED (M/V Delaware Cruise 59-1): Tuna fishing explorations in the Gulf Stream area of the North Atlantic, conducted by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel Delaware, were scheduled to begin on January 12, 1959.

This is the first tuna exploration into the Gulf Stream area at this season of the year. A comprehensive survey of oceanographic conditions and tuna abundance is expected to better define the limits of the Atlantic tuna resources.

In 1957, explorations were conducted in this area during a later period--March 1957--and concentrations of bluefin, yellowfin, and albacore tuna were found to be present. The distribution of these species of tuna is unknown

The Bureau's research vessel Delaware.

during the winter season, and the planned exploration survey will attempt to answer some of the questions on the oceanic distribution of the Atlantic tunas.

North Atlantic Fisheries Investigations

BOTTOM FISH SAMPLES COLLECTED AND HADDOCK TAGGED (M/V Albatross III Cruise 122): Half-hour tows with a standard No. 36 trawl, containing a fine mesh cod-end liner were made by the U. S. Bureau of Commercial Fisheries research vessel Albatross III between November 17-26, 1958, at 44 stations in an area 30 miles x 20 miles off the Highland Grounds east of Stellwagen Bank and Cape Cod. All species were enumerated, gross weight for each determined, and commercially-important species measured. Fifteen special tows were made to obtain haddock for tagging.

Dredge samples of the bottom fauna and scoopfish samples of the substrates were taken at 32 stations. Bathythermograph casts were made at all stations.

Haddock were taken at all stations and were particularly abundant in areas rich in bottom fauna. Dogfish, sea dab, and whiting were taken at most stations. Pollock were abundant only at certain stations. A total of 692 haddock was tagged.

Oregon

ALBACORE TUNA FISHING SEASON FOR 1958: The 1958 albacore tuna-fishing in Pacific waters off the Oregon coast brought over $2 million in income to commercial fishermen, the Oregon Fish Commission reported on December 5, 1958. Approximately 9.5 million pounds of fresh tuna was delivered to buyers at Astoria, Newport, and Coos Bay, Ore.

The season's landings are rated seventh largest since the fishery was discovered by Oregon and California pilchard fishermen in 1936, a Commission statistics officer stated.

Appearance of the tuna schools in Oregon waters in 1958 is credited with providing a timely income for commercial fishermen who were having difficulty in attempts to obtain normal poundage from their salmon fishing activities.

"A majority of the deep-water boats stored their salmon trolling gear and switched to tuna fishing as soon as the schools were discovered," the statistical officer stated. "Unusual water conditions evidently had altered the normal pattern of commercial salmon trolling and catches had been light. The tuna's arrival put the fleet back to work and added a much needed supplement to financial success of the season," he added.

Oregon landings of tuna increased steadily from 1938 until 1944, when a peak catch of 22.5 million pounds was landed. During the following 10 years albacore tuna landings varied between 12.2 and 0.5 million pounds, but since 1954 have shown a steady increase.

Cooperative study by Pacific Coast fishery agencies has created a broad program aimed at developing and maintaining the albacore tuna stock.

Oysters

SPAWNING AND SETTING IN LONG ISLAND SOUND, SUMMER 1958: The spring and early summer of 1958 were colder than usual. According to the climatological data of the U. S. Department of Commerce, the departure from normal air temperature in the New Haven area during May was -3.1° F. June 1958 was the coldest since 1903, with a monthly average of 62.3° F. and a departure from normal of -3.5° F. Due to the cold weather, gonad development and spawning of oysters were delayed and resulted in an unusually late set according to observations by the Bureau of Commercial Fisheries Milford (Conn.) Biological Laboratory.

Regardless of the late spawning and low water temperatures, oyster larvae appeared in our samples in comparatively large numbers. By July 28, from 100 to 320 oyster larvae of all stages, ranging from straight hinge to those ready-to-set, were found in the 200-gallon water samples collected at each of the three Milford stations. The number of ready-to-set oyster larvae per 200-gallon sample had increased to 720 at some stations by July 31. In 1957 the total number of larvae found in all the samples collected during the entire summer was only 3 or 4.

It is significant that at no time after their first appearance, and until near the end of the season, were mature ready-to-set larvae completely absent from our samples. The summer of 1958 was radically different from many previous summers, when finding mature, eyed larvae in the plankton samples was considered an unusual event. Considering that the number of parent oysters was the smallest in years, the 1958 observations conclusively demonstrated that the number of mature larvae present during the period of propagation is not directly proportional to the number of spawners.

Setting of oysters started on July 28 at Station 10 in the Bridgeport area, and a day later at the Milford stations (table 1). After July 31 it began to be of a general nature, occurring at all stations and rapidly increasing in intensity. The maximum of the first wave of setting took place July 31-August 4. Following the peak, the intensity of setting decreased rapidly until August 27.

The beginning of the second wave of setting occurred about August 29. Between that date and September 2, the intensity of setting began to show an increase, especially at Stations 1 and 2 in the Milford area. A day or two later, setting again began to be of a general nature and the peak of the second wave occurred between September 5-11. This peak, however, was not as high as that of the first wave.

From then on setting continued in a rather irregular pattern, especially at the first two stations in the Milford area, where no definite trend in intensity was noted, as short periods of light setting were followed by periods of comparatively heavy setting. The last set was recorded October 9-10 at Station 5 on the State spawning bed in New Haven Harbor. This was the latest setting ever recorded in Connecticut waters in a quarter of a century.

Table 1 - Weekly Intensity of Oyster Setting on Collectors at Each of Ten Sampling Stations in Long Island Sound, Summer 1958.

Areas	MILFORD			NEW HAVEN				BRIDGEPORT			TOTAL
Station	1	2	3	4	5	6	7	8	9	10	
Depth (in ft.)	10	20	30	10	10	20	30	10	20	30	
Dates	(Numbers of Larvae on One Side of 100 Shells)										
7/21-27	0	0	0	0	0	0	0	0	0	0	0
7/28-8/3	21,525	58,305	310	1,075	4,870	2,575	25	4,965	2,940	1,355	97,945
8/4-10	3,845	19,790	15	1,970	2,680	2,220	20	1,035	355	420	32,350
8/11-17	560	1,770	15	155	1,025	870	40	65	130	10	4,640
8/18-24	200	2,415	15	100	210	140	5	250	435	50	3,820
8/25-31	250	390	0	15	65	120	0	110	25	5	980
9/1-7	2,165	1,955	25	95	865	565	20	355	750	100	6,895
9/8-14	985	1,295	40	535	450	255	10	260	200	1,920	5,950
9/15-21	430	210	10	25	315	55	5	90	165	45	1,350
9/22-28	705	610	5	5	25	5	0	65	25	45	1,490
9/29-10/5	40	0	0	0	5	5	0	5	0	5	60
10/6-12	0	0	0	0	5	0	0	0	0	0	5
Total	30,705	86,740	435	3,975	10,515	6,810	125	7,200	5,025	3,955	155,485

Intensity of setting greatly varied from station to station. For example, at Station 2 in the Milford section, which received the heaviest set of all the stations in the Sound, a setting of 86,740 spat per 100 shells was recorded for the entire season (table 1). If all the young oysters that set on the shells at or near this station during the summer had not died, there would have been about 867 young oysters on each shell in this area by the first of October. At Station 1, a heavy set of 307 spat per shell was recorded for the season; yet, the intensity at this station was about three times lighter than that at Station 2. Still a greater discrepancy was noticed when the setting at Stations 2 and 3 was compared, the latter gathering only about 4 spat per shell for the entire season.

Although the Milford area showed the heaviest setting, the two other areas, namely, New Haven with Stations 4, 5, and 6, and Bridgeport with Stations 8, 9, and 10, also showed commercial sets. The only exception was Station 7, located at a 30-foot depth in the New Haven area, where the set was too light to be considered of commercial importance.

The set of 1958 was the heaviest since the Laboratory began systematic observations in 1932. It took place regardless of the low temperatures during the spring and early summer preceding the reproductive season, and in spite of the fact that the population of adult oysters serving as parents was probably the lowest ever recorded in the history of Connecticut oyster fisheries. Therefore, the heavy

setting of 1958 demonstrates once more that, the old assumption that good setting occurs only during the summers when the temperature is above normal is not correct.

The second contention, which is even at this time supported by some oyster biologists, namely, that the intensity of setting is roughly proportional to the number of adult oysters found on the beds during the spawning season, is obviously also not well founded. This conclusion is strongly supported by the earlier observations of a Bureau biologist, who reported that the setting in Long Island Sound in 1925 was one of the heaviest in the history of Connecticut fisheries for shellfish. By the summer of 1926 the oysters were so numerous that representatives of the industry were worried that no market would be found for such an abundant supply. Regardless of this tremendous number of spawners, setting of oysters in Long Island Sound in the summer of 1926 was a complete failure; whereas, in 1958, although the number of spawners was probably the lowest in the history of the industry, the intensity of setting was one of the heaviest.

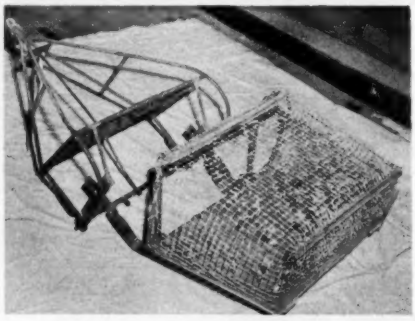


Fig. 1 - Starfish dredge designed and constructed at Milford, Conn. Biological Laboratory.

Unfortunately, the heavy set of 1958 did not contribute significantly to the oyster reserves of Long Island Sound because the majority of the young oysters were killed by starfish and drills soon after setting. The observations showed that by the end of September a live spat was a rarity among the young oysters recently killed by starfish and drills. Because of the industry's inability to control starfish which showed a ten-fold increase in population in 1957, large oyster areas have been abandoned. For example, the entire Milford section, comprising Stations 1, 2, and 3 where the heaviest setting was recorded (table 1), has been given up. The same is true of other districts, with the exception of a few comparatively small areas, such as Lot 152 in New Haven and several lots in the Bridgeport area, where all available means have been employed by the oystermen to protect the set from starfish.

The fate of the 1958 oyster set supports the view that the open Sound is not only an unreliable place for obtaining set regularly, but also a place where, if a set does occur, it is difficult and expensive to protect the young oysters from enemies. Furthermore, hurricanes and storms often severely damage the cultivated beds in open waters. Many of us still remember the storm in November 1950, which killed millions of oysters of all sizes and ages, almost entirely ruined many beds, and placed several oyster companies on the verge of bankruptcy. Nothing can be done to prevent these calamities since such storms usually come with little warning.

Due to these considerations, the Laboratory has emphasized for years the desirability of transferring a substantial portion of the seed-producing operations from the open Sound to more protected areas, such as estuaries of rivers, protected bays and harbors, and natural and artificial ponds. This suggestion should not be interpreted as a recommendation to abandon entirely the oyster beds of Long Island Sound proper because they can still be used for some aspects of oyster cultivation, such as for holding large oysters, which are relatively safe from attack by enemies. It is recommended, that as much seed production as possible be transferred to protected areas, where extensive natural oyster beds existed in the past.

There are several important advantages of shifting seed-producing efforts to inshore areas. Observations show rather clearly that oyster sets rarely fail in inshore waters. Furthermore, beds located in bays and harbors are better protected against storms. Finally, because the salinity of the water in many inshore areas where oyster beds could be established is comparatively low, the oysters, especially young set, would be protected by nature itself against starfish and drills, which require a comparatively high salinity to exist and propagate. This consideration alone is of tremendous practical significance because it eliminates from the debit side of the ledger astonishingly high sums of money spent on pest control. A specific example of the difference in survival of spat in open Long Island Sound and in estuaries of rivers is that at Station 2 in the Milford section where the heaviest setting of the season was recorded, and that at an auxiliary station in the Milford River in front of the laboratory where a small experimental bed was established. At Station 2 practically none of the 1958 set of oysters survived until the end of October, while at the auxiliary station established in a protected area, where starfish and drills are usually either entirely absent or not too numerous because of low salinity, about 63 percent of the 1958 summer's set was still alive.

The chief obstacles to the utilization of the most promising, natural oyster-producing bottoms are believed to be the archaic regulations, many of which were passed more than a century ago, and which designated most of the inshore waters as public grounds. These areas, consequently, cannot be rented to private individuals or companies. Since neither the State nor municipalities are engaged in the cultivation of oysters, these regulations, which were perhaps desirable in the past, have eventually led to the present condition where the majority of our potentially most productive oyster areas are almost entirely barren due to lack of care and cultivation. Thus, both economically and biologically these areas are now virtually wasted, whereas proper cultivation and management of these grounds could assure the industry of a more abundant annual supply of oysters.

The shellfish biologists hesitate to suggest a definite method on the basis of which the future oyster industry of Connecticut should be built. It

is known that the solution of the problem is within reach. Some approaches have already been suggested in Bureau publications or expressed in discussions with oystermen and biologists. Before any constructive steps can be undertaken to ameliorate present conditions, however, the cooperation of all parties will be necessary. This means that a working agreement should be reached between representatives of oyster companies, natural growers, and municipal and State authorities who are in charge of shellfish resources. Several plans can be suggested for the management of newly-established oyster beds, which will be of advantage to all groups concerned. (Bulletin No. 5, Fisheries · Biological Laboratory, Milford, Conn.)

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BEST SEASONS FOR CROPPING IN CHESAPEAKE BAY: Predicting when Chesapeake Bay oysters will yield the greatest amount of meats is possible, point out the biologists of the Virginia Fisheries Laboratory, Gloucester Point, Va.

In the lower part of the Bay, in recent years, oysters will reach their best condition in May or early June and meat yields have been greatest at that time, But in the Rappahannock River and upper Chesapeake Bay oysters grow rapidly and fatten in fall, soon after spawning, and they again fatten in spring. On the other hand, oysters in the lower Bay do not follow this pattern since sometimes they fail to fatten appreciably in fall and in some years lose weight as winter progresses.

The differences are explained by pointing out that oysters in saltier waters become infected with the parasite Dermocystidium during hot summers and are unable to fatten until they free themselves of this pest in winter. When food becomes abundant in spring, they are able to profit from it. Variations in occurrence of Dermocystidium and in the amount of food available affect the fatness of oysters from year to year.

Oysters in Hampton Roads and lower York River often show similar patterns of fattening. They are sometimes better than Rappahannock oysters during spring and summer; whereas, in fall, Rappahannock River oysters may hold the edge over those in the lower Bay. It would be biologically sound to harvest up-river and upper Bay crops early in the season leaving lower river and Bay oysters for harvesting in the spring and summer.

Unfortunately, demand for oysters is greatest in fall, when they are poor and yield minimum volumes of meats per bushel. How to get top prices for oysters harvested in spring, when flavor is best and yields are greatest, is a problem that the industry would like to solve.

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STUDIES ON HANDLING AND PROCESSING BEGUN: A joint study by the U. S. Food and Drug Administration, U. S. Bureau of Commercial Fisheries, and the oyster industry to obtain basic and practical data on the biological, chemical, and physical characteristics of the oyster has been initiated, according to an announcement by Assistant Secretary of the Interior Ross Leffler. Research will be concentrated on the handling and processing of fresh shucked oysters.

The data will be used as the basis for improving packing and marketing practices and for the evaluation of present Food and Drug Administration standards of identity. The necessity for such a study became evident as the result of court cases concerning the amount of solids in a given unit of oysters.

Each of the government agencies and the oyster industry is supplying a technical employee to participate in the research under the direction of Dr. Benjamin Willier

of Johns Hopkins University, selected as a disinterested scientist. Work has begun at the Virginia Fisheries Laboratory, Gloucester Point, Va.

The laboratory is located on the western shore of Chesapeake Bay near a typical oyster-shucking plant. This centralized location will facilitate the plans for the research group to study oysters from all the major producing areas. The three-man team will have an excellent opportunity for active plant study on the effect of processing variables on the composition and characteristics of packed oysters at the nearby commercial oyster plants.

Note: Also see Commercial Fisheries Review, December 1958 p. 42 and October 1958 p. 34.

Pacific Oceanic Fishery Investigations

FIVE TAGGED SKIPJACK RECAPTURED IN NOVEMBER 1958: During November 1958 five tagged skipjack were sent to the Laboratory of the Pacific Oceanic Fishery Investigations. These were all from recently-tagged skipjack and showed little movement from the point of tagging. Four of the skipjack were tagged and released near the Hawaiian Island of Lanai and recovered in that area. The fifth tagged skipjack was released in August 1958 near Lanai and recovered of Oahu. These five tagged fish brought the recoveries from the 1958 releases up to 11.4 percent.

* * * * *

TILAPIA REARING EXPERIMENTS CONTINUED: In November 1958 the Pacific Oceanic Fishery Investigations Maui experimental tilapia rearing station produced 57,000 fry. This amount was about one-third of the October 1958 production and indicated that the adult spawners were reacting to a drop in water temperatures. The November crop of tilapia fry brought the total produced by that station since the beginning of the experiment to 1 million young fish.

The Kewalo Basin tilapia rearing plant produced 18,300 fry in November, but of this amount 3,218 fry were lost due to disease. The losses were attributed to infectious pancreatic necrosis, believed to be incurable virus disease.

Experiments on the concentration and sex ratios of the tilapia brood stock indicated that an allotment of 4 square feet of pond bottom for each male and a ratio of three females resulted in the maximum number of young.

Salmon

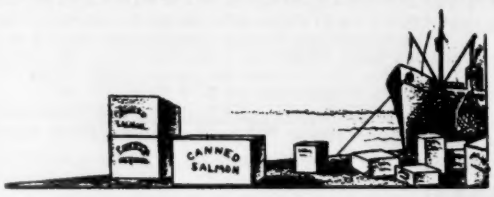
PROGRESS REPORT ON COLUMBIA RIVER SALMON RESEARCH: As part of the Bureau of Commercial Fisheries program of research on salmon protection, the electrical installation at Cascade Reservoir, Idaho, for controlling squawfish, which prey on salmon, was continued in operation during July and concluded on August 1, 1958. Cascade Reservoir was chosen as an experimental site in May 1958 for evaluating the effectiveness of an electrical installation for blocking and trapping squawfish moving upstream from the reservoir to spawn. During July the electrical installation was 80-percent effective as a control device when 24-hour "power on" and "power off" tests were conducted. The data collected indicate that large numbers of squawfish move out of the reservoir to spawn during June.

During the peak of the fall king salmon migration, a one-hour test was conducted in which all fish moving up the 35-foot wide Washington shore fishway at Bonneville Dam were diverted into an experimental fishway 6 feet in width. Approximately 500 salmon were diverted and passed through the experimental section during the test period. Observations indicated that the fish passed through the 8-pool test section with no apparent sign of distress or delay. Other experiments have been conducted which substantiate these results. A Technical Committee, composed of representatives of Oregon, Washington, and Idaho fishery departments, and U. S. Bureau of Commercial Fisheries personnel, reviewed the results of these experiments. They concluded on the evidence presented that the fishway with a one-foot rise in each 8 feet of length showed no difference on the rate of passage of fish upstream than the one-foot-in-16-feet fishway, provided that proper hydraulic conditions were satisfactory. The Committee, therefore, recommended that a one-on-10 fishway be constructed at Ice Harbor on an experimental basis provided that it can be demonstrated that suitable hydraulic conditions will be obtained and a program of evaluation of this ladder financed by the Corps of Engineers and satisfactory to the Committee be provided.

The diurnal fluctuations of behavior of adult king salmon migrants was examined in the forebay of Bonneville Dam with sonic tracking equipment. Preliminary examination of the data indicates that the rate of upstream movement in daylight was about 0.70 mile per hour, but in darkness about 0.07 mile per hour; the rate of movement in darkness may be influenced by increased light intensity on moonlight nights. Many fish which had migrated 3 to 5 miles upstream during the day returned slowly downstream in darkness; a few fish returned to the spillway section of the dam about 300 yards below their point of release.

* * * * *

UNITED STATES AND ALASKA CANNED PACK, 1958: The 1958 United States canned salmon pack in the Pacific Northwest and Alaska totaled more than 3.6 million standard cases (48 1-lb. cans), according to preliminary estimates. This was the best pack since 1954 when almost 4.2 million cases were packed. The 1958 pack was 14.3 percent more than in 1957 when almost 3.2 million cases were packed, and slightly better than 1956's 3.5 million cases.



The increase in the 1958 salmon pack was due to the good pack of pink salmon in Alaska.

Table 1 - United States and Alaska Salmon Pack, 1958 (Preliminary Data)

Species	Alaska	Puget Sound	Columbia River	Wash. Coast	Total 1958	Total 1957
	(1,000 Standard Cases--48 1-lb. cans)					
Chinook	51.1	1.0	78.9	0.6	131.6	142.1
Chum	758.9	56.0	2.5	5.0	822.4	924.5
Pink	1,583.2	0.7	-	-	1,583.9	943.6
Sockeye	491.9	417.0	1/ 43.7	1.0	953.6	963.6
Silver	104.2	25.0	10.6	0.5	140.3	203.5
Steelhead	-	-	7.7	-	7.7	7.6
Total	2,989.3	499.7	143.4	7.1	3,639.5	3,184.9

1/ Includes 33,137 cases of Puget Sound sockeye salmon packed on the Columbia River.

South Carolina

FISHERIES BIOLOGICAL RESEARCH PROGRESS, OCTOBER-DECEMBER 1958: Oyster Research: South Carolina oysters, for the most part, are intertidal. With a normal six-foot tide in the vicinity of the Bears Bluff Laboratories, most oysters are exposed to the air from 6 to 8 hours in every tidal cycle. Such exposure to temperature changes, sunshine, and rainfall, must have a decided effect on oysters. In order to study this more carefully, a manually-operated elevator was constructed and a tray containing 1,000 oysters was placed on it. Another tray of 500 oysters was placed beneath the elevator on the bottom. No attempt was made to duplicate tidal cycles, but daily, from 8 a.m. to 1 p.m., the oysters in the tray are raised above the surface. For the remainder of the day they are completely submerged. A total of 500 oysters in the tray are left completely exposed while 500 are automatically covered by a sheet of plywood when the elevator is raised. The 500 oysters in the tray on the bottom are, of course, submerged at all times. Each month a sample of the oysters under the three conditions are analyzed to determine growth, mortality, and condition. Continued study of the oysters throughout the year will give some clues as to the affect of drying, airing, sunshine, shade, and total submersion on oysters in South Carolina.

In connection with seed oyster studies, experimental shipments of young seed were made to Solomons, Md., Pensacola, Fla., and New Orleans, La. Small seed oysters were imported from New York to South Carolina for study.

Shrimp Research: During the last quarter of 1958, shrimp were relatively scarce at all regular established trawling stations off South Carolina. Except for a few scattered runs, the wintering-over crop of small white shrimp appear to be below normal. Likewise, the commercial catch of white shrimp during the October-December quarter was relatively scarce. Had it not been for an abnormally large catch of brown shrimp in midsummer, South Carolina's crop would have been seriously curtailed in 1958 and fallen below the 5.5-million-pound average. The severe cold winter of 1957/58 is held responsible for the decline in white shrimp.

One exploratory shrimp fishing cruise was made in waters to a depth of 40 fathoms. Good trawling bottom was encountered and reasonably large catches of rock shrimp were made during the two nights of the cruise.

Pond Cultivation: One of the experimental ponds which has been in operation without any planned program of management since February 1958 was drained on October 9, 1958. This pond, which is slightly over an acre, yielded a harvest of 342 pounds of fish, crab, and shrimp. The greater weight was in mullet, spot, and blue crabs. The size of the blue crabs is particularly worthy of note. The 89 crabs harvested weighed almost 68 pounds. Of the 75 males, 20 weighed a pound or more each. The largest was 7.75 inches from spine to spine, and weighed 19 ounces.

One of the smaller ponds was again stocked with sexually-mature brown shrimp in hopes of spawning these in the pond. However, no larval shrimp developed in the pond.

With the help of the U. S. State Department and the American Consul at Singapore, Bears Bluff Laboratories is being shipped a small sample of "sapolin" (pressed tea seed) which has long been used in the Orient for the control of predacious fish in shrimp ponds. When this material arrives, small-scale experiments in sea water aquaria will be conducted to determine whether sapolin can be used successfully for the control of predators in shrimp-pond culture in South Carolina. (Progress Report No. 38, October-December 1958, of the Bears Bluff Laboratories.)

Note: Also see Commercial Fisheries Review, November 1958 p. 53, August 1958 p. 50, and May 1958 p. 40.

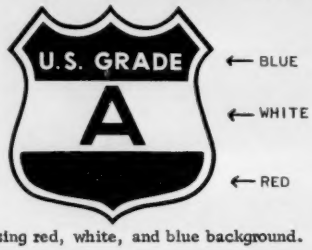
Standards

QUALITY STANDARDS FOR MORE FISHERY PRODUCTS: The Department of the Interior shield--the housewife's assurance of quality fishery products--will be in greater evidence in American retail food markets next year because:

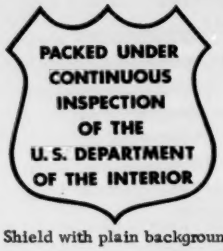
1. The Bureau of Commercial Fisheries, U. S. Fish and Wildlife Service, plans to establish voluntary quality standards for 5 additional fishery products in 1959, bringing to 8 the total which will be entitled to bear the shield showing either Grade A or Grade B, both of which are good.

2. The Bureau expects that several additional fish-processing firms will request the Department's continuous inspection service, thereby joining the 18 firms which now have the right to use the Department shield showing "continuous inspection;" and that other firms will avail themselves of the sampling service and earn the right to state that the products offered the housewife are part of a lot which was officially sampled by Bureau inspectors.

In addition to these direct efforts to assure quality, the Bureau is continuing its research on methods for "handling for quality"--methods which begin with the catching of the fish and which follow through to assure the processor the type of raw material which he can use for quality products.



Shield using red, white, and blue background.



Shield with plain background.

The first of the five new standards of quality will apply to haddock fillets. These standards will become effective March 1. Considerable advance notice was given before these standards were promulgated. Meetings were held in several cities before the proposed standards were published in the Federal Register and a comment period was provided after publication. Processors and consumers indicated satisfaction with the proposals.

Other voluntary standards scheduled for promulgation during the year include those for halibut steaks, raw breaded fish portions, cod fillets, and ocean perch fillets. Standards already in effect are for frozen fried fish sticks, frozen raw breaded shrimp, and frozen fish blocks. Since the fish blocks are used in making fish sticks, they are not apt to be seen on retail counters.

To meet Bureau standards of quality, the fishery products must be made out of wholesome material of good odor and taste and must be processed under sanitary conditions. The shield with the "U. S." grade designation is used only on products for which standards have been established.

The Bureau offers two types of inspection service, continuous and sample or lot inspection. In either instance the processor pays for the service. It is not mandatory that a processor use the inspection service or accept the quality standards but those who do so have the opportunity to announce that fact to the person purchasing the product at the retail counter.

In spite of the fact that Interior's inspection service did not begin until July 1, 1958, by mid-December 18 firms had accepted the opportunity for continuous inspection and oral and written inquiries about the inspection service indicate that many more will avail themselves of it during the coming year.

The "handling for quality" research of the Bureau has been going on for several years. Included in the work are methods of landing fish with minimum bruising; icing and storage in the hold to avoid spoilage; washing the decks and holds with chlorinated sea water to reduce the possibility of bacterial action; unloading and transporting techniques and refrigeration. In addition the Bureau is conducting research on preservation by radiation, on rancidity, and on numerous other things which influence the quality of the product that reaches the consumers' tables.

Transportation

RAILWAY EXPRESS AGENCY REQUESTS ANOTHER INCREASE IN RATES: The Railway Express Agency filed a petition for a 3½-percent increase (effective January 1, 1959), in all rates and charges. The Express Company alleged that the increase was necessary to cover increases of about $12 million annually in wages, payroll taxes, unemployment insurance, and the cost of materials and supplies, all of which occurred after it asked the Commission for the 15-percent increase in rates and charges in 1957 (Ex Parte 210). The Interstate Commerce Commission on October 13, 1958, granted the 15-percent general increase in railway express rates and charges, but most fishery products were exempted from the increase.

Petitions for suspension of the 3½-percent increase were due in the office of the Commission on or before December 20, 1958.

The new petition also requested the Commission to reconsider the October 13, 1958, decision that denied any increases in the rates and charges for carload traffic. The new petition by the Railway Express Agency is apparently confined to the evidence concerning carload traffic in fresh fruits and berries.

Tuna

OCEAN WEATHER STATIONS MAY AID FISHERMEN LOCATE SCHOOLS: Devices now envisaged should make possible, in a few years' time, predictions about tuna availability in some areas. Scripps Institution of Oceanography, University of California, has an Australian who is the leader of such a project. In a letter to the Australian Director of Fisheries, the leader of the project states:

". . .the most interesting thing we are doing is attempting to install fixed automatic temperature- and wind-recording stations in the open ocean. This type of equipment is sure to become a very important tool of marine science one day. . . .I think these devices will enable us to make useful predictions about tuna availability in some areas in a few years' time, as well as helping other people in other ways."

An area in southern Mexico is of special interest, he continues. This area is windy and much precious time tends to be lost in mere scouting for tuna. It is hoped eventually to be able to say where tuna are most likely to be found after a blow of such and such a kind, and how long after it. This could give the fishermen more time for actual fishing. (Australian Fisheries Newsletter, November 1958.)

United States Fishery Landings, January-November 1958

Landings of fish and shellfish in the United States and Alaska the first 11 months of 1958 were about 5 percent less than for the same period of the previous year. The total domestic catch of fishery products in 1958 should amount to about 4.6 billion pounds. While the catch will be far below the record 5.2 billion pounds in 1956, it will be only 2 percent below the average catch during the past ten years and will be the seventh largest for the United States.

The principal declines occurred in the landings of menhaden, down 205 million pounds; jack mackerel, down 65 million pounds; Alaska herring, down 37 million pounds; Pacific mackerel, down 33 million pounds; anchovies, down 31 million pounds; whiting, down 19 million pounds; and haddock, down to 10 million pounds.

While landings of many important species declined sharply, the catches of several were up substantially. Landings of Pacific sardines through December 20 were nearly five times as large as in 1957, totaling over 200 million pounds--an increase of 181 million pounds. Salmon landings in both the Pacific Coast States and Alaska were up, with the total catch about 48 million pounds greater than in 1947. Tuna landings were about 23 million pounds more than in the previous year; ocean perch were up 15 million pounds; and Maine herring up 12 million pounds.

Table 1 - United States Fishery Landings of Certain Species for Periods Indicated, 1958 and 1957 1/

Species	Period	1958	1957	Total 1957
		(1,000 Lbs.)		
Anchovies, Calif.	11 mos.	7,362	38,110	38,408
Cod:				
Maine	10 mos.	2,624	2,195	2,352
Boston	11 "	15,403	16,976	17,487
Gloucester	11 "	2,880	1,727	2,020
Total cod		20,907	20,898	21,859
Haddock:				
Maine	10 mos.	3,629	4,220	4,667
Boston	11 "	78,702	89,456	93,617
Gloucester	11 "	9,393	8,492	8,898
Total haddock		91,724	102,168	107,182
Halibut 2/:				
Wash. & Ore.	Year	15,634	15,430	15,430
Alaska	"	19,972	20,733	20,733
Total halibut		35,606	36,163	36,163
Herring:				
Maine	10 mos.	154,139	141,885	153,621
Alaska	Year	80,828	118,290	118,290
Industrial fish, Maine & Mass. 3/	11 mos.	127,360	128,796	130,275
Mackerel:				
Jack	11 mos.	21,054	85,820	86,300
Pacific	11 "	19,364	52,314	55,200
Menhaden	11 "	1,419,747	1,624,795	1,690,128
Ocean perch:				
Maine	11 mos.	67,445	60,915	64,723
Boston	11 "	2,435	3,631	3,819
Gloucester	11 "	72,489	62,485	65,389
Total ocean perch		142,369	127,031	133,931
Salmon:				
Wash. 4/	9 mos.	46,276	39,871	43,273
Oregon 4/	10 "	7,905	11,056	11,354
Alaska	Year	248,000	203,437	203,437
Sardines, Pacific	to Dec. 20	202,000	40,910	45,800
Scallops, sea, New Bedford	11 mos.	14,182	15,530	16,461
Shrimp (heads-on):				
South Atlantic and Gulf States	8 mos.	106,458	121,448	197,043
Wash.	9 "	6,463	1,392	2,458
Oregon	10 "	1,483	196	403
Squid, Calif.	10 "	4,862	10,670	10,758
Tuna, Calif.	11 "	293,642	277,560	291,234
Whiting:				
Maine	10 mos.	23,577	15,810	15,810
Boston	11 "	578	988	1,002
Gloucester	11 "	49,977	76,431	76,521
Total whiting		74,132	93,229	93,333
Total all above items		3,125,863	3,291,569	3,486,911
Others not listed		620,504	640,457	1,292,089
Grand Total		3,746,367	3,932,026	4,779,000

1/Preliminary.
2/Dressed weight.
3/Excluding menhaden.
4/Landed weight.

Table 2 - United States Fishery Landings by States for Periods Indicated, 1958 and 1957 1/

Area	Period	1958	1957	Total 1957
		(1,000 Lbs.)		
Maine	10 mos.	286,114	266,030	290,528
Massachusetts:				
Boston	11 mos.	115,557	127,012	135,072
Gloucester	11 "	219,510	241,687	248,928
New Bedford	11 "	105,354	99,951	104,334
Provincetown	11 "	24,880	25,070	25,109
Total Mass.		465,301	493,720	513,443
Rhode Island 2/	8 mos.	70,405	86,450	121,273
New York 2/	10 "	33,982	34,172	40,223
New Jersey 2/	10 "	39,977	44,080	50,541
North Carolina 2/	10 "	49,111	60,185	64,634
South Carolina 2/	11 "	14,922	16,878	17,289
Georgia	10 "	16,813	15,893	18,584
Florida 2/	10 "	118,135	109,671	140,698
Alabama	8 "	6,875	8,436	11,882
Mississippi 2/	9 "	11,422	16,689	19,991
Louisiana 2/	8 "	39,266	44,532	63,332
Texas 2/	9 "	46,378	55,473	77,156
Ohio (Mar.-Oct.)	10 "	17,052	24,723	25,818
Oregon 3/	10 "	54,340	53,277	57,694
Washington:				
Salmon 3/	9 mos.	46,276	39,871	43,273
Other	7 "	64,397	61,926	99,478
California:				
Certain species 4/	11 mos.	548,284	505,384	529,391
Other	7 "	52,603	49,044	86,862
Total Calif.		600,887	554,428	616,253
Rhode Island, Middle Atlantic, Chesapeake, South Atlantic, and Gulf States (menhaden only)	11 mos.	1,415,914	1,603,132	1,661,480
Alaska:				
Halibut 5/	Year	19,972	20,733	20,733
Herring	"	80,828	118,290	118,290
Salmon	"	248,000	203,437	203,437
Total all above items		3,746,367	3,932,026	4,276,030
Others not listed		6/	6/	502,970
Grand Total		6/	6/	4,779,000

1/Preliminary.
2/Excludes menhaden.
3/Landed weight.
4/Includes catch of anchovies, jack and Pacific mackerel, Pacific sardines, squid, and tuna. Data on squid are for a ten-months period and on sardines through December 20.
5/Dressed weight.
6/Data not available.
Note:--Data principally represent weight of fish and shellfish as landed except for mollusks which represent the weight of meats only.

United States Fishing Fleet[1/] Additions

SEPTEMBER 1958: A total of 65 vessels of 5 net tons and over was issued first documents as fishing craft in September 1958. Compared with the same month of 1957, this was an increase of 17 vessels. The Gulf States continued to lead with 33 vessels, the South Atlantic area was second with 16, and Pacific was third with 7.

Table 1 - U. S. Vessels Issued First Documents as Fishing Craft, by Areas, September 1958 with Comparisons

Area	September		Jan.-Sept.		Total
	1958	1957	1958 1/	1957 1/	1957
	(Number)				
New England	1	2	11	17	19
Middle Atlantic	-	2	11	21	23
Chesapeake	4	15	69	82	104
South Atlantic	16	7	110	91	130
Gulf	33	14	231	117	166
Pacific	7	2	96	89	102
Great Lakes	1	-	6	5	8
Alaska	3	6	30	46	48
Puerto Rico	-	-	-	1	1
Virgin Islands	-	-	1	-	-
Total	65	48	565	469	601

1/ Revised.
Note: Vessels assigned to the various sections on the basis of their home ports.

Table 2 - U. S. Vessels Issued First Documents As Fishing Craft, by Tonnage, September 1958

Net Tons	Number
5 to 9	17
10 to 19	13
20 to 29	18
30 to 39	11
40 to 49	4
50 to 59	1
160 to 169	1
Total	65

Fishing craft that were issued documents as fishing craft during the first nine months of 1958 totaled 565 vessels--an increase of 96 vessels as compared with the same period of 1957. Of the vessels documented for fishing, 41 percent were reported from the Gulf States.

1/ Includes both commercial and sport fishing craft.

U. S. Foreign Trade

EDIBLE FISHERY PRODUCTS, SEPTEMBER 1958: Imports of edible fresh, frozen, and processed fish and shellfish into the United States during September 1958 were 1.9 percent in quantity and 1.6 percent in value as compared with August 1958.

Table 1 - U. S. Foreign Trade in Edible Fishery Products, September 1958 with Comparisons

Item	Quantity			Value		
	September		Year	September		Year
	1958	1957	1957	1958	1957	1957
	(Millions of Lbs.)			(Millions of $)		
Imports:						
Fish & shellfish:						
Fresh, frozen, & processed[1/]	92.7	67.9	837.0	25.6	21.1	248.4
Exports:						
Fish & shellfish:						
Processed only[1/] (excluding fresh & frozen)	3.3	5.2	69.7	1.3	2.3	16.8

1/ Includes pastes, sauces, clam chowder and juice, and other specialties.

The increase was due mainly to higher imports of frozen tuna other than albacore and frozen salmon, and to a lesser degree, an increase in the imports of shrimp and lobsters. These increases were partly offset by a 6.0-million pound decrease in the imports of frozen albacore tuna.

Compared with September 1957, the imports in September 1958 were up sharply by 36.5 percent in quantity and 21.3 percent in value due to higher imports of ground-

fish fillets, frozen tuna (including albacore and other) and canned tuna in brine. Compensating, in part, for the increases was a drop of about 3.9 million pounds in the imports of frozen albacore tuna.

United States exports of processed fish and shellfish in September 1958 were higher by 32.0 percent in quantity and 44.4 percent in value as compared with August 1958. Compared with the same month in 1957, the exports in September 1958 were down by 36.5 percent in quantity and 43.5 percent in value. The exports this September as compared with the same month in 1957 were lower due to light packs of California mackerel and anchovies, and the lack of export markets for the larger pack of California sardines. The fishing season for California sardines opened on August 1, 1958, and catches through September were many times greater than in the same period in 1957.

* * * * *

GROUNDFISH FILLET IMPORTS, NOVEMBER 1958: Imports of cod, haddock, hake, pollock, cusk, and ocean perch fillets (including blocks) into the United States during November 1958 totaled 7.4 million pounds--a decline of 3.5 million pounds (32 percent) compared with the same month of 1957. Although imports from Canada (4.4 million pounds) dropped 44 percent below November 1957, she was still the leading supplier in volume--accounting for 59 percent of the month's total imports.

During the first 11 months of 1958, imports of cod, haddock, hake, pollock, cusk, and ocean perch fillets (including blocks) amounted to 138.3 million pounds. This was a gain of 2 percent as compared with the same period of 1957. Imports from Canada made up 72 percent of the total, followed by Iceland with 13 percent, and Denmark with 7 percent. Imports from nine other countries comprised the remaining 8 percent.

Information furnished by the Bureau of the Census indicates that about 11,945,000 pounds of blocks of bits and pieces of groundfish were imported during the first nine months of 1958, in addition to fillets and fillet blocks.

The quota of groundfish and ocean perch fillets and blocks permitted to enter the United States at $1\frac{7}{8}$ cents a pound in the calendar year 1958 was 35,892,221 pounds, based on a quarterly quota of 8,973,055 pounds. The quota for the calendar year 1957 amounted to 37,375,636 pounds. Imports during individual quarters in excess of the established quarterly quota enter at a duty of $2\frac{1}{2}$ cents a pound.

Note: See Chart 7 in this issue.

* * * * *

IMPORTS OF CANNED TUNA IN BRINE UNDER QUOTA: The quantity of tuna canned in brine which may be imported into the United States during the calendar year 1958 at the $12\frac{1}{2}$-percent rate of duty has been established as 44,693,874 pounds. Any imports in excess of this established quota will be dutiable at 25 percent ad valorem.

Imports from January 1-December 20, 1958, amounted to 46,163,996 pounds, according to data compiled by the Bureau of Customs. This total exceeds the quota by 1,470,122 pounds. The quota of 44,693,874 was reached on November 20, 1958. Imports above the quota are dutiable at the 25-percent rate of duty. From January 1-December 31, 1957, a total of 42,513,788 pounds had been imported.

Water Resources

NEW NATIONAL MAP SHOWS ARMY, INTERIOR, TVA PROJECTS: Publication of a new water resources map showing the expansion of flood control, irrigation, navigation, and power developments by the Army Corps of Engineers, Department of the Interior Bureau of Reclamation, and the Tennessee Valley Authority over the past five years was announced November 26, 1958.

The new map brings up to date the Federal Government's official water resources map to show the projects completed and new work authorized since the previous map was published in 1953.

Shown also on the map are the 23,000 miles of improved inland waterways and the approximately 500 major harbors developed, operated, and maintained by the Army Engineers. The inland waterways, particularly the Mississippi-Ohio and Gulf Intracoastal system, have become one of the world's most outstanding water-connected, industrial production lines. Traffic on the inland waterways has increased 43 percent within the past decade.

The map, which shows the location and status of major Federal water resources projects, can be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at $2.25 each. It indicates marked changes both in Corps of Engineers and Bureau of Reclamation developments during the past five years. The map also includes facilities of the Tennessee Authority in the southeastern portion of the United States and other Federal agencies throughout the country.

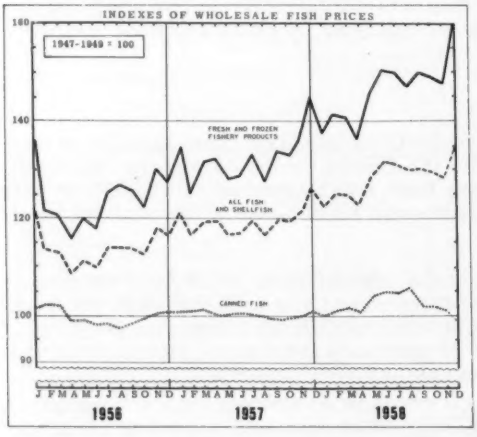
Included are over 300 new Corps of Engineers and 35 new Bureau of Reclamation projects, embracing multipurpose projects serving water supply, recreation, fish and wildlife, and other needs as well as flood control, irrigation, power, and navigation. These projects, totalling estimated Federal costs of about $1.7 billion and $1.2 billion, respectively, have

been added to programs authorized by previous congressional actions.

Since 1953, 11 new Bureau of Reclamation storage dams have been completed or brought under construction, and an additional 20 authorized. These structures when completed will provide an additional 34,169,000 acre-feet of storage capacity in the West.

Wholesale Prices, December 1958

During December 1958, mid-month wholesale prices for selected edible fishery products resumed their upward trend after a slight drop in the preceding month. Some sharp increases in fresh fish and more moderate increases in fresh and frozen shrimp prices were largely responsible for the rise. The December 1958 edible fish and shellfish (fresh, frozen, and canned) wholesale price index (134.8 percent of the 1947-49 average) was up 5.1 percent from the preceding month and 6.5 percent above December 1957, when prices were also high.


INDEXES OF WHOLESALE FISH PRICES
1947-1949 = 100
160
140
120
100
90
FRESH AND FROZEN FISHERY PRODUCTS
ALL FISH AND SHELLFISH
CANNED FISH
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1956
1957
1958

In December 1958 prices for the drawn, dressed, and whole finfish subgroup items were 14.5 percent higher than in November. From November to December 1958 higher wholesale prices for fresh large drawn haddock (up 54.3 percent), whitefish (up 20.0 percent), and yellow pike (up 29.9 percent) were primarily responsible for the increase. When compared with December 1957, the subgroup index in December 1958 was 23.1 percent higher due to substantially higher prices for all the six items in the subgroup. All fresh fish items in the index were in light supply this past December and prices for the two frozen items (halibut and salmon) were up due to higher ex-vessel prices this past spring and summer.

The fresh processed fish and shellfish subgroup index for December 1958 was higher by 6.7 percent from November due to a 29.2-percent price increase in fresh haddock fillet prices at Boston and an 8.6-percent increase in fresh shrimp prices at New York City. Shucked oyster prices were unchanged during this period and also from the same month in 1957. The index in December 1958 as compared with the same month in 1957 was about unchanged. An increase of 7.8 percent in haddock fillet prices was about offset by a decrease of 1.1 percent in fresh shrimp prices at New York City from December 1957 to December 1958.

The index for December 1958 for frozen processed fish and shellfish increased by 3.3 percent over the preceding month because of increases of 0.5 to 1.0 cent a pound in frozen haddock and ocean perch fillet prices and a jump of about 5 cents a pound in frozen shrimp prices at Chicago. From December 1957 to December 1958 prices for the subgroup were up 7.9 percent--prices for all the items in the subgroup were higher in December 1958 as compared with December 1957.

Canned fish primary prices in December 1958 were mixed--canned salmon and California sardines were unchanged, but prices were lower by 8.0 percent for canned tuna and higher by 3.0 percent for canned Maine sardines when compared with the preceding month. The net result was a decline of 2.8 percent in the canned fish index from November to December 1958. When compared with December 1957, canned fish prices were lower by 2.5 percent. All the canned fishery products were lower in December 1958 as compared with the same month in 1957 except

for Maine sardines which rose one-third from the low 1957 level. The packing seasons for all canned fish in the index was over by the end of December, except for tuna. The markets continued firm for Maine sardines and salmon, but was weak for California sardines. Demand continued good for canned tuna, but the record pack of 14.3 million cases (20 percent more than in 1957) was exerting pressure on the canners to lower prices in order to reduce their inventories.

Table 1 - Wholesale Average Prices and Indexes for Edible Fish and Shellfish, December 1958 With Comparisons

Group, Subgroup, and Item Specification	Point of Pricing	Unit	Avg. Prices1/ ($)		Indexes (1947-49=100)			
			Dec. 1958	Nov. 1958	Dec. 1958	Nov. 1958	Oct. 1958	Dec. 1957
ALL FISH & SHELLFISH (Fresh, Frozen, & Canned)					134.8	2/128.3	129.6	126.6
Fresh & Frozen Fishery Products:					160.0	2/147.4	149.2	144.8
Drawn, Dressed, or Whole Finfish:					177.5	2/155.0	160.2	144.2
Haddock, lge., offshore, drawn, fresh	Boston	lb.	.23	.15	235.0	152.3	149.0	206.5
Halibut, West., 20/80 lbs., drsd., fresh or froz.	New York	lb.	.34	.34	104.2	105.2	106.2	96.9
Salmon, king, lge. & med., drsd., fresh or froz.	New York	lb.	.79	.78	176.9	2/174.1	182.6	136.0
Whitefish, L. Superior, drawn, fresh	Chicago	lb.	.75	.73	185.9	179.7	161.1	146.3
Whitefish, L. Erie pound or gill net, rnd., fresh	New York	lb.	.90	.75	182.0	151.7	182.0	128.4
Yellow pike, L. Michigan & Huron, rnd., fresh	New York	lb.	.65	.50	152.4	117.3	138.4	111.4
Processed, Fresh (Fish & Shellfish):					148.0	138.7	140.8	147.8
Fillets, haddock, sml., skins on, 20-lb. tins	Boston	lb.	.62	.48	211.0	163.3	170.1	195.7
Shrimp, lge. (26-30 count), headless, fresh	New York	lb.	.88	.81	139.0	128.0	131.1	140.6
Oysters, shucked, standards	Norfolk	gal.	6.00	6.00	148.5	148.5	148.5	148.5
Processed, Frozen (Fish & Shellfish):					140.0	135.5	133.1	129.7
Fillets: Flounder, skinless, 1-lb. pkg.	Boston	lb.	.42	.42	108.6	108.6	108.6	103.4
Haddock, sml., skins on, 1-lb. pkg.	Boston	lb.	.41	.41	128.7	127.1	127.1	117.7
Ocean perch, skins on, 1-lb. pkg.	Gloucester	lb.	.31	.30	124.9	120.8	120.8	114.8
Shrimp, lge. (26-30 count), 5-lb. pkg.	Chicago	lb.	.91	.86	139.6	132.7	128.5	128.8
Canned Fishery Products:					98.3	101.1	101.8	100.8
Salmon, pink, No. 1 tall (16 oz.), 48 cans/cs.	Seattle	cs.	21.50	21.50	112.2	112.2	113.5	120.0
Tuna, lt. meat, chunk, No. 1/2 tuna (6-1/2 oz.), 48 cans/cs.	Los Angeles	cs.	11.00	11.95	79.3	86.2	86.2	82.9
Sardines, Calif., tom. pack, No. 1 oval (15 oz.), 24 cans/cs.	Los Angeles	cs.	4.15	4.15	96.9	96.9	100.4	112.0
Sardines, Maine, keyless oil, No. 1/4 drawn (3-3/4 oz.), 100 cans/cs.	New York	cs.	8.47	8.22	90.1	87.5	87.5	67.6

1/ Represent average prices for one day (Monday or Tuesday) during the week in which the 15th of the month occurs. These prices are published as indicators of movement and not necessarily absolute level. Daily Market News Service "Fishery Products Reports" should be referred to for actual prices.
2/ Revised.

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EUROPEAN COMMON MARKET

LOWERS CUSTOMS DUTIES:

The Council of Ministers of the European Economic Community (popularly called the Common Market) issued a press release on December 3, 1958, concerning measures which will be taken by the six member states on January 1, 1959.

The following measures, among others, will enter into effect as of that date:

Customs duties on industrial products, except for products coming under the regime of the European Coal and Steel Community, will be subject to a tariff reduction of 10 percent. This reduction will apply to all members of the Organization for European Economic Cooperation (OEEC), all members of the General Agreement on Tariffs and Trade and all other countries entitled to most-favored-nation treatment. However, no reduction will be made on commodities where the present duty is equivalent to or below the rate of the future Common External Tariff. (This will apply to a large number of commodities in the Benelux tariff.)

The reductions will be provisional and will be applied for an indefinite period. No reciprocity is required, although the Common Market countries will welcome similar measures by countries benefitting from these reductions.

In cases where the rates of the Common External Tariff are not yet known--as, for example, the rates on items listed in the so-called G List appended to the Rome Treaty--each of the Common Market member states will determine which reductions are to be granted outside countries.

Most nonagricultural quotas applied by member states of the Common Market to European members of the OEEC are to be increased an average of 20 percent with each individual quota automatically increased by a minimum of 10 percent. It is not yet clear whether the benefitting countries will be expected to grant reciprocal benefits to the Common Market member taking the quota action.

The French representative to the OEEC Council gave notice that the French Government, in addition to the tariff reduction, will liberalize 40 percent of its imports from the OEEC on January 1, 1959.

Note: Also see Commercial Fisheries Review, January 1959, pp. 13-20.

FISHERIES AGREEMENTS

ITALIAN-YUGOSLAV FISHERIES AGREEMENT REVISED:

The three-week old negotiations for a fisheries agreement between Italy and Yugoslavia ended on November 20, 1958, with the signing at Belgrade of a new agreement valid through two fishing sessions to April 30, 1960. The major changes over the previous arrangement were shortening of the period covered by one-half year; the substitution of the coast of Montenegro for Istria; a delimitation for Italian boats of 11 square miles in the Gulf of Trieste, and the setting up of new procedures for handling of trespassing, other violations, and the prosecutions involved.

The news agency Italia in its official release stressed that the Italo-Yugoslav aim was reciprocal resolution of problems in the spirit of increasing cooperation in the hope that sincere understanding would produce highly profitable results for both nations.

This is the third agreement signed. The Italians will pay 900 million lire

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(about US$1.4 million) for the term of the agreement for certain concession zones, the United States Embassy at Rome reported in a November 28, 1958, dispatch.

FOOD AND AGRICULTURE ORGANIZATION

ATOMIC ENERGY EXPECTED TO AID WORLD FISHERIES DEVELOPMENT:

Atomic energy, particularly through the use of radioisotopes and radiation in research, will play an increasingly important part in the development of the world fishery resources, states the Chief of the Atomic Energy Branch of the Food and Agriculture Organization (FAO), Rome, Italy.

This prediction is in a report on "The Potential Contribution of Atomic Energy to Development in Agriculture and Related Industries," published by FAO in English, French, and Spanish. The report covers power applications, the use of radiation in food preservation and processing and in plant breeding, the value of radioisotopes in research, and the significance of research to the development of agriculture and related industries which, of course, include fisheries.

Referring to radioisotopes, the report says that use of them can "accelerate and enhance the contributions of research to the development of world fisheries." While about three-quarters of the world's surface is occupied by water, it provides less than 2 percent of the world's food supplies, but that this 2 percent represents about 10 percent of the animal protein consumed.

"Every effort should therefore be made to increase world fish production," the report declares. "This can be achieved by extension and intensification of current fishing operations, by improved management of those operations and by effecting advantageous changes in the fisheries resources themselves."

Such a program calls for the comprehensive investigation of the resources and in such research radioisotopes can be of particular help "in measuring the basic production of water areas, in following the passage of nutrient material through the successive links of the food chains of fish of economic value to man, and in various other parts of the program."

The success of such research "will permit a better planning of fishing operations" and more efficient use of resources.

The report also points out that the application of nuclear-derived power could be of considerable significance to the fishing industry, particularly "for use in mother and factory vessels of fishing and whaling fleets operating over long periods at great distances from their bases, especially in the Antarctic."

It points out that present power plants in fishing boats, including fuel tanks, occupy about 40 percent of the available space on board. The introduction of small nuclear propulsion plants could radically change the situation. "The size of the vessel could be decreased, or its speed increased, or the fish-hold space or fish-processing space increased for the same sized hull."

While his report deals largely with agriculture, it is of considerable interest to all engaged in fisheries.

* * * * *

SPONSORS FIRST WORLD SCIENTIFIC MEETING ON SARDINES:

The first world scientific meeting on the biology of sardines is being organized by the Food and Agriculture Organization (FAO) and will be held at FAO's Rome, Italy, headquarters, September 14 to 21, 1959.

The world sardine catch is worth about $50,000,000 a year and represents about a fourth of the total world commercial catch of fish, crustaceans, molluscs, etc. Sardine stocks are, however, subject to considerable fluctuations which often have disastrous economic consequences for fishermen and the fishing industry.

"These fluctuations, which, so far, are unpredictable, sometimes affect entire stocks," pointed out the secretary of the world meeting, speaking at FAO headquarters. "Fishery biologists, of course, have been studying the problem for many years, but so far have not been able to review together the work they have done in various parts of the world, exchange experience and ideas, and discuss the further research needed to solve this problem.

"The forthcoming meeting will enable them to do these things and will lead, we hope, to world-wide collaboration in probing the mystery of the fluctuations in sardine stocks," he continued. "About 100 countries and territories are directly concerned in sardine fishing."

The genus Sardina and the related genera Sardinops and Sardinella will be considered together, in view of their biological affinities, under the common name of sardines, which is used in many countries.

"This designation should not be taken as an official standard name for industrial and commercial purposes," FAO pointed out.

Many Governments concerned have been invited to send representatives to the meeting. Private research institutions concerned with the biology of sardines and the effect of fisheries on sardine stocks are also invited to participate. Some 15 international organizations have been invited to send observers.

The meeting will review the present knowledge of the development of the commercial sardine fisheries, the biology of the stocks, the environments of sardine populations and the fluctuations in stocks, and catches.

These various discussions will be based on synopses prepared by FAO and on papers presented by the participants. It is hoped that the meeting will consider future international cooperation in dealing with the problems of fluctuation, and how such cooperation can be made effective.

GENERAL AGREEMENT ON TARIFFS AND TRADE

REPORT ON 13TH SESSION AT GENEVA:

The 37 Contracting Parties to the General Agreement on Tariffs and Trade (GATT) ended their 13th Session at Geneva, Switzerland, with new decisions that international action is needed to stimulate world trade. The conference agreed on the need for common action in three key areas of international trade--tariff reduction, study of the effects of agricultural protection, and the export problems of underdeveloped areas.

The GATT is a multilateral trade agreement whose participating countries account for almost 85 percent of world trade. Its main features are schedules of agreed tariff rates, provisions limiting the use of nontariff measures to regulate trade, and procedures for consultations on specific trade problems. The annual sessions of the GATT Contracting Parties constitute the principal world trade forum.

The 13th Session opened October 16 with a meeting of ministerial representatives, who reviewed the current international trade scene.

Program for Expansion of Trade: The Contracting Parties agreed that intensified efforts

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should be made to expand international trade, the field of particular competence of the General Agreement. They identified three areas where such efforts should be concentrated. Two of these were the trade difficulties cited in the Haberler Report (a study of trends in international trade, prepared by four experts)--the effects of protectionism throughout the world on agricultural trade and the relatively low rate of growth in the export trade of the less developed countries. A third area was the tariff field. Three separate committees were set up for these areas.

In proposing another round of multilateral tariff negotiations, the United States pointed out that negotiations beginning in mid-1960 would fit in with the need for the six member countries of the European Economic Community to adjust their existing tariff concessions before taking their first step on January 1, 1962, toward a common external tariff.

European Economic Integration: Since the last Session of the Contracting Parties, the Rome Treaty establishing a European Economic Community (the European Common Market) among France, Italy, Federal Germany, Belgium, the Netherlands, and Luxembourg has entered into force. During the year, efforts have also been continued to negotiate a European Free Trade Area, which would associate multilaterally the Common Market, the United Kingdom, and other members of the Organization of European Economic Cooperation (OEEC). The six countries of the EEC will, after a transitional period of about 12 years, have a customs union, within which there will be no restrictions on the flow of trade and which will apply a common external tariff to imports from outside the Community. The proposed free trade area would also eliminate restrictions on trade among member states, but allow each member to maintain its own tariffs against imports from nonmembers.

The GATT recognizes, subject to certain conditions, the desirability of such arrangements because of their trade-creating potential. The Contracting Parties approved, with some technical amendments, the approach regarding the European Economic Community which had been developed at the meeting of the Intersessional Committee in April-May of 1958, with reference to the procedures for consultations among the Common Market countries and other contracting parties, and to the decision to postpone any final determination as to the status of the Rome Treaty under the General Agreement. The Contracting Parties therefore agreed, without prejudice to the legal questions which may arise, that multilateral consultation shall take place between the Community and those contracting parties that believe that their trade interest may be adversely affected as the result of specific measures decided on by the Community.

In considering the matter, the Contracting Parties agreed normal procedures of the General Agreement could be adapted to handle problems arising in this situation and, further, that the same approach might profitably be applied in other cases where the interests of a number of contracting parties were involved.

The United States representative commended the EEC on the progress that it had achieved. He expressed the belief that any problems could be settled without interfering with the Community's effective development and called attention to the consultation procedures as a means for dealing with specific difficulties. Various delegations, including that of the United States, recalled certain areas of concern but were willing generally to await developments under the terms of the Treaty.

The Contracting Parties noted that negotiations for a European Free Trade Area were continuing and expressed the view that, at such time as the agreement might be signed, it should be made available to GATT for review and comment.

Balance-of-Payments Import Restrictions: The Contracting Parties agreed on procedures for the first series of annual consultations which the revised provisions of the Agreement require be held with countries maintaining import restrictions to conserve foreign exchange. Consultations will be held next year with 16 of these countries. As in the past, the United States will seek through these consultations to encourage the consulting countries to relax their remaining restrictions as rapidly as possible.

During the session, the Contracting Parties held consultations on import restrictions with Australia, Ceylon, Ghana, and the Federation of Malaya, and the Federation of Rhodesia and Nyasaland. Under the authority of a special provision of the Agreement, each of these countries maintains certain import restrictions that discriminate against imports from the dollar area. Ceylon, however, announced shortly after its consultation that it was abolishing its few remaining discriminatory restrictions. Ghana and Malaya, which came into the Agreement last year, consulted for the first time. The Contracting Parties formally concluded a consultation with New Zealand, which reported substantial progress in reducing its discrimination against dollar area goods. The Contracting Parties also began consultations with the United Kingdom. These will be resumed in the spring of 1959, along with the other consultations scheduled for next year.

The Contracting Parties continued their discussion with the Federal Republic of Germany on dismantling its remaining import restrictions, originally applied for balance-of-payments reasons. These discussions began in 1957, when the International Monetary Fund reported that Germany no longer needed to use import restrictions to protect its foreign exchange reserves.

The United States, joined by other countries, expressed continued concern that, despite Germany's economic progress, a variety of important agricultural products and some industrial items are still subject to import controls. The United States expressed particular concern with the discriminatory character of remaining restrictions.

The Contracting Parties decided that interested countries should jointly consult with Germany re-

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garding restrictions that will be maintained by Germany after December 31, 1958. This consultative group, which will include United States representatives, will meet in Geneva early next year. The Contracting Parties expect to consider the report of the consultative group at their next session, scheduled for April 1959.

The United States consulted bilaterally with certain countries maintaining import restrictions (Japan, Denmark, Norway, Ceylon, Australia, Brazil, the Netherlands, the Dominican Republic and the Federation of Rhodesia and Nyasaland), with a view to easing specific problems which have arisen in United States trade with these countries. A full and frank exchange of views was achieved in all cases, and some relaxations of existing restrictions on specific goods were obtained.

Tariff Adjustments: At Cuba's request the Contracting Parties established a Tariff Negotiations Committee to steer the various renegotiations on which Cuba expects soon to embark in connection with its current tariff revision. These negotiations will be conducted under the procedures of Article XXVIII, and perhaps Article XVIII, as agreed in a decision taken at the 12th session. The negotiations themselves will not begin until a later date, and the United States will not, for its part, join in such negotiations until after the usual opportunity has been given to interested parties to submit their views.

The Session also approved the text of a Protocol to embody the results of the tariff renegotiations conducted with Brazil. This Protocol will be open for signature later in the year.

Organizational Arrangements: To improve the administration of the General Agreement, two short sessions of the Contracting Parties each year, extending for three weeks, will take the place of annual sessions lasting 6 to 8 weeks. This arrangement will expedite the transaction of regular GATT business, and permit more timely and effective consideration of new and urgent problems.

The Contracting Parties also decided that, while the Intersessional Committee would be given general authority to conduct intersessional business on their behalf, some responsibilities would also be assigned to working parties which would continue in existence between sessions. Member countries were urged to provide qualified permanent representatives in or near Geneva, who could effectively and responsibly represent their countries in dealing with the GATT Secretariat and with the resident representatives from other countries.

New Participants: Switzerland is currently engaged in tariff negotiations with a substantial number of contracting parties as a step towards provisional participation in the General Agreement. At the 13th Session, the Contracting Parties adopted a declaration and a resolution which, when accepted, will bring into effect the results of these negotiations and will establish the rules of the General Agreement as governing commercial relations between contracting parties and Switzerland.

Yugoslavia has expressed the wish to establish closer relations with the Contracting Parties and to contribute through this association to the establishment of mutually advantageous commercial relations with the Governments which are parties to the GATT. The Contracting Parties established a working party to report to the 14th Session on the terms on which the Government of Yugoslavia might be brought into association with the Contracting Parties. The Working Party is also to report on the advisability of further study on the possible development of such association into full participation in the General Agreement.

The Cambodian Government informed the Contracting Parties that Cambodia had decided in principle to accede to the General Agreement. Pending formal accession, Cambodia will apply de facto, on a reciprocal basis, the provisions of the General Agreement in the conduct of its trade with the Contracting Parties. The question of United States participation in tariff negotiations with Cambodia was reserved for later decision.

Japan has been a contracting party since 1955, but a number of GATT countries have availed themselves, with respect to Japan of a provision which permits non-application of the General Agreement. As they have at previous Sessions, the United States and several other countries supported Japan's request for full application of the General Agreement by all GATT countries. India announced that it is now applying the General Agreement fully toward Japan.

The bilateral discussions initiated with the British delegation sought to obtain further relaxation of import restrictions applied to conserve dollar resources by the United Kingdom. Frozen halibut, frozen salmon, mild-cured salmon, canned pilchards, and canned shrimp were among the items for which more liberal trade terms with the United States were sought. No conclusions were reached at the meeting, but negotiations are continuing with the British.

NEXT SESSION: The Contracting Parties agreed to hold their next session in Geneva in March 1959, and to accept the invitation of Japan to meet in Tokyo in October 1959.

GREAT LAKES FISHERY COMMISSION

MEETING HELD IN ANN ARBOR, MICH: A meeting of the Great Lakes Fishery Commission was held at Ann Arbor, Mich., December 3-5, 1958. Both Canada and the United States presented reports on sea lamprey control and research conducted by both countries in the Great Lakes. The reports gave an account of progress and revealed that the results obtained by both countries were about identical, particularly on sea lamprey control methods.

United States commercial landings of lake trout for 1958 were estimated to be

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close to one million pounds: Michigan 700,000 pounds, Wisconsin 250,000 pounds. Ontario's lake trout landings were estimated to be about the same as in 1957.

The recommendations made by the Special Committee for the Commission's consideration and approval were:

1. Added emphasis and development in introducing lake trout possessing superior qualities; and selective breeding of trout using hybrids of lake and brook trout that can produce an early-maturing and fast-growing trout.

2. To hatch and rear all available eggs so that hatchery-reared lake trout can be introduced in Lakes Michigan and Huron to establish breeding populations following control of the sea lamprey.

3. That the maximum capacity of existing facilities is calculated at 3.7 million yearlings, which is inadequate, and that additional facilities be provided by 1963 for rearing another 2 million yearling lake trout.

4. That an adequate system of sampling native and hatchery lake trout populations be established in order to gain more knowledge of abundance, distribution, growth rate, and survival of both native lake trout and planted stock.

The Commission's Scientific Advisory Committee considered a prospectus for Lake Erie fishery research. This prospectus recommended studies of (1) the environment (including basic physical and chemical data), (2) life histories of the most important species of fish (of which there are 15 in Lake Erie), (3) population studies (including age and size composition, sex ratio, etc.), and (4) yield (including compilation of catch statistics, refinement of sampling procedures of the commercial fishery, and determination of optimum yields). In addition to these biological studies, there were recommendations for studies of gear development, technology, marketing, and economics. Finally, there was an addendum to cover Lake St. Clair. The proposed studies there would be similar to those in Lake Erie.

There was also a discussion of the plans for lamprey control in fiscal years 1959 and 1960. It was pointed out there were 13,000 to 16,000 second-feet of stream to be treated in Lake Michigan. To treat 8,000 second-feet per year as planned would require 132,000 pounds of chemical at $3.50 per pound for a total of $460,000. It was stated that the studies in Lake Superior should be completed before those in Lake Michigan are started. There was extensive discussion of the means of carrying out the treatment program and coordination between Canada and the United States. There was a suggestion for a team for stream treatment, which would travel either in Canada or in the United States. There was also some discussion of a continuation of barriers. Their chief function would be to (1) check on the effectiveness of the lampricide treatment and (2) to prevent reinfection.

The Plenary Session convened December 4 with all Commissioners present. The report on lamprey control and research in Canada pointed out that there were some 20 electrical barriers that were in operation on the Canadian side of Lake Superior. He was able to report significant decreases in the populations of lampreys in the barriered streams. There was a kill of over 3,000 lampreys at barriers in 1958. Investigations by divers at the Sault Ste. Marie Locks revealed no significant migration of lampreys through those locks.

The United States report on 1958 progress in Great Lakes fishery investigations pointed out the development of successful lampricide treatment in 1958. The poisoning of eight streams in the fall of 1958 under the new control program was reported. Kill of lamprey larvae in these streams was reported practically complete and destruction of fish was either nil or negligible.

Reports of cooperating state organizations were given for Wisconsin and for Michigan.

In the final Plenary Session, the Commission called for recommendations of

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the Scientific Advisory Committee on changes in the fiscal year 1959 program. It was indicated that there should be some showing of savings in this fiscal year and that there should be justification of changes from the original program.

There was also a report on the work of the lake trout restoration committee. It showed that considerable progress has been made on preparations for lake trout restoration. State, Federal, and Provincial agencies collected a total of 2,300,000 lake trout eggs in 1958. These agencies have on hand a stock of some 36,000 brood fish. Although only 27 percent of these are mature at present, 74 percent will be mature by 1962. Some 740,000 fry are available for distribution. The Ontario Department of Lands and Forests has a very significant research program to develop hybrid trout. These hybrids are crosses between speckled trout and lake trout and the objective is to produce a fish with the desirable characteristics of the lake trout and the early maturity of the speckled trout. It is expected that by 1964 the agencies will be producing 4,500,000 yearlings, but capacity is available for only 3,700,000. The committee, therefore, made a strong recommendation for additional rearing capacity to be ready by 1963.

A resolution regarding coordinated fishery regulations among the Great Lakes political units was adopted by the Commission.

It was agreed that the next meeting would be held at Ottawa in April 1959.

(NORTH EUROPEAN) INTERNATIONAL FISHERIES CONVENTION

PERMANENT COMMISSION MEETS IN DUBLIN: The Seventh Meeting of the Permanent Commission set up under the (North European) International Fisheries Convention of 1946 took place in Dublin, November 25-28, 1958. Delegations attended from all 14 of the Member Governments: Belgium, Denmark, Federal German Republic, France, Iceland, Ireland, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland. Observers represented the United States Government, the International Council for the Exploration of the Sea, the Food and Agriculture Organization of the United Nations and the International Commission for the Northwest Atlantic Fisheries.

The main subject under discussion was the Report by the Chairman of the Committee set up by the Commission at their Sixth Meeting held in London in October 1957 to consider what were the precise difficulties of member countries as regards the application of the present mesh provisions of the 1946 Convention and what might be done to meet those difficulties consistent with the purposes of the Convention. Accompanying this report was a report by a subcommittee of scientists giving a detailed and comprehensive survey of the sole fisheries in the North Sea and the whiting fisheries in the North Sea, the Irish Sea, and the Channel, together with similar information about the other major fisheries which might be mingled with them and of mixed fisheries both for nonindustrial and industrial purposes.

This report was welcomed by the Commission as a major contribution to their understanding of many of the outstanding conservation problems facing Member Governments in the area covered by the Convention. They agreed to make arrangements to have this document published by the International Council for the Exploration of the Sea.

The Commission took this scientific document as the basis of their deliberations on the problems presented by the report of the Committee on mesh difficulties. These problems were concerned with the sole fisheries, the whiting fisheries and mixed fisheries.

The Commission agreed, that, as regards the sole fisheries, there was no obstacle in the way of effective enforcement of the 75-mm. (2.95-inch) mesh. As regards the whiting fisheries, a proposal was considered to provide on an experimental basis for a 60-mm. (2.36-inch) mesh for whiting in certain parts of the Irish Sea and the Channel. The Commission was, however, unable to agree that this proposal should at present be pursued.

As regards the mixed fisheries, general concern was expressed about the effect on protected species if this kind of fishing developed, and it was agreed that such developments should be kept under review. The Commission also agreed that the provisions in the Convention, whereby 10 percent by weight of each total landing of protected species which was not intended for human consumption might consist of undersize fish, was extended to May 1, 1962.

The Commission also considered a proposal put forward by the Norwegian Delegation for an increase in the mesh size to 130 mm. (5.12 inches) in the northeastern part of the Convention area. It was agreed that further scientific study should be undertaken to investigate the effect of an increase of mesh of that order. The Commission agreed to resume consideration of the matter at their next meeting.

The Commission considered the question whether the Convention should be amended to permit the use of certain kinds of chafing gear in order to prevent wear and tear of nets. They agreed un-

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animously to recommend to member Governments that a precisely-defined chafing gear, similar to that permitted under the rules of the International Commission for the Northwest Atlantic Fisheries, should be permitted for nets of 110-mm. (4.33-inch) mesh.

A review of reports by Contracting Governments on infractions of the rules of the Convention was discussed and the Commission agreed to undertake steps to ensure greater uniformity in such reports and to provide Governments with more detailed information of the enforcement arrangements by all member Governments concerned.

The Commission expressed their appreciation of the valuable work undertaken for them by the International Council for the Exploration of the Sea and, as a token of this appreciation, decided to make a contribution of £400 (US$1,120) to the funds of the Council.

The Permanent Commission of the International Fisheries Convention of 1946 was set up to consider at regular intervals the conservation measures provided for under that Convention for the protection of certain species of fish in the North-East Atlantic, the Arctic, and dependent seas. The Convention provides for minimum mesh sizes for certain types of nets. There are also regulations regarding the landing of immature fish under which the major species of demersal fish cannot be landed if they are below a certain size; the size varies with each species.

The Convention area, so far as the application of mesh sizes is concerned, is divided into two parts. In the waters around Iceland, off Northern Norway, Bear Island, and the Arctic 110-mm. (4.33-inch) mesh is applied. In the waters around Great Britain and Ireland, however, the present minimum mesh size laid down for manila and sisal trawls is 75 mm. (2.95 inches) although, under present regulations, this minimum size is to be increased by 5 mm. (0.2 inch) in 1961. There are slightly different mesh sizes laid down for "light" trawls and seine nets.

Irish fishermen are at present concerned only with the 75-mm. (2.95-inch) area.

Note: Also see Commercial Fisheries Review, September 1958, p. 76.

NORTH PACIFIC FUR SEAL COMMISSION

SECOND ANNUAL MEETING HELD:

The North Pacific Fur Seal Commission adjourned its Second Annual Meeting on December 13, 1958. The Commission, which was established under the provisions of the 1957 Interim Convention on Conservation of the North Pacific Fur Seals, signed at Washington on February 9, 1957, opened its Second Annual Meeting in Washington, D. C., on December 8.

The Commission reviewed the results of the 1958 scientific research programs of the four Member Governments--Canada, Japan, the Union of Soviet Socialist Republics, and the United States--regarding the fur seals of the North Pacific Ocean. The Commission also approved a coordinated plan for research during the 1959 season. Each country on the Commission was represented by a Commissioner and advisers.

Canadian Commissioner George R. Clark was elected Chairman of the Commission, to serve through the next Annual Meeting, and Japanese Commissioner Kenjiro Nishimura was elected Vice-Chairman. Other members of the Commission are Aleksandr A. Ishkov for the Union of Soviet Socialist Republics, and Arnie J. Suomela for the United States.

It was agreed that the next Annual Meeting of the Commission would be held in Moscow beginning January 25, 1960.

The Commission has as its major responsibility investigation of the fur seal resources of the North Pacific Ocean. The objective of this investigation is to determine the measures which will make possible the maximum sustainable yield from these resources, with due regard for their relation to the productivity of other living marine resources in the area. In accordance with a plan developed by the Commission at its First Meeting, research agencies of the four Governments are carrying on research at sea, while United States scientists carry on research on the breeding grounds on the Pribilof Islands in the Eastern Bering Sea, and Soviet scientists do similar work on the Commander Islands in the Western Bering Sea, and on Robben Island in the Okhotsk Sea. The investigations are concentrated on dynamics of the fur-seal populations, distribution and migration at sea, feeding habits, and harvesting methods.

Investigations at sea will begin in early February 1959 on both sides of the Pacific. Investigations at the rookeries will begin in the early summer as the seals arrive at the end of their annual migration to the breeding grounds.

Under the provisions of the Interim Convention, commercial harvesting of seals at sea is prohibited. All harvesting is done on the breeding grounds under the control of the United States on the Pribilof Islands, and under the control of the Soviet Government on Robben Island and the Commander Islands. The proceeds of the annual harvest are shared according to an agreed formula among the four Governments.

Note: Also see Commercial Fisheries Review, February 1958 p. 56.

NORTHWEST ATLANTIC FISHERIES COMMISSION

NINTH ANNUAL MEETING:

The Ninth Annual Meeting of the Northwest Atlantic Fisheries Commission will be held in Montreal, Canada, during the week beginning June 1, 1959. In the week preceding the meeting, various meetings of the Standing Committee on Research and Statistics and Groups of Scientific Advisers to Panels will take place.

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OCEAN PERCH SYMPOSIUM:

A joint International Commission for the Northwest Atlantic--International Council for Exploration of the Sea symposium on ocean perch (Sebastes) will be held in Charlottenlund, Denmark, in connection with the Statutory Meeting of ICES in October 1959. ICES has accepted an invitation from ICNAF to co-sponsor the symposium and has declared their

International (Contd.):

readiness to accommodate the Symposium. After consideration with ICES, the symposium will take place in the week following the ICES Meeting, i.e. October 12-16, 1959.

There is increased activity in the fishery for ocean perch or redfish in the central part of the Northwest Atlantic Convention Area. The greatly expanded fishery in the Labrador area, the increased Canadian yields around Newfoundland, and the new extensive fishery by the U.S.S.R. northeast of the Grand Bank and around Flemish Cap point to a greatly increased and increasing importance of the ocean perch in the Convention Area. This development calls for intensified study of the major problems in ocean perch biology. It is to be hoped that the ocean perch symposium will further the solution of these problems.

A considerable part of the area to which the ocean perch fishery now has been extended was explored a few years ago by the Newfoundland Station of the Fisheries Research Board of Canada. The report from the Station pointed out that possibilities for a development of the fishery to these areas existed.

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OTOLITH EXCHANGE PROGRAM:

The Commission's cod otolith exchange program, which was set up following a recommendation of the Committee on Research and Statistics, is developing satisfactorily. In this program the same sample of otoliths is studied independently by scientists of different countries. It is believed that the analysis of their reports and discussions arising from them will result in a greater consistency in the interpretation of the growth rings of the otoliths. Six samples from Subarea 1, six from Subarea 3, and four from Subarea 4 are now being circulated among interested scientists. (Newsletter No. 30, dated December 15, 1958, issued by the Commission for August-December 1958.)

NORWEGIAN-RUSSIAN SEALING AGREEMENT

Norway and the U.S.S.R. have signed an agreement (with annex) on measures for the regulation of the seal catch and the preservation of seal stocks in the northeast Atlantic. The agreement, signed in Oslo on November 22, 1957, came into force with the exchange of the instruments of ratification at Moscow on June 27, 1958. The agreement was registered by Norway on August 25, 1958. (U. N. Statement of Treaties and International Agreements--Registered or Filed and Recorded with the Secretariat during August 1958.)

SOUTH PACIFIC COMMISSION

FISHERIES DEVELOPMENT PROGRAM:

The South Pacific Commission program for fisheries aims at a better exploitation of marine resources in the South Pacific area, the bringing into production of natural waters by stocking them with various edible fish species, and the promoting of fish culture in ponds where conditions appear suitable.

Active work in the program commenced in July 1954 with the appointment of a Fisheries Officer.

Fisheries planning and implementation take place in close cooperation with territorial administrations and populations.

At its seventeenth session the Commission approved the creation of a technical committee on fisheries, to advise the Commission on the development of the project.

A three-month Fisheries Training Course, held under the auspices of the Commission and of the Food and Agriculture Organization, ended on February 21, 1957. The Course was attended by 25 trainees from 14 Pacific island territories, and by 4 observers. Fishing operations, fishing gear, fishing craft, and fish culture were the four main subjects covered by the curriculum. Most territorial administrations succeeded in making good use of the trained personnel.

International (Contd.):

An outstanding result of the stocking of natural waters was observed in Lake Siwi, on Tanna Island in the New Hebrides, where a very small breeding stock of Tilapia mossambica, introduced in July 1958, produced in less than 17 months a fish population estimated at well over one million. In spite of an exceptional drought which caused extremely high mortality, the fish are solidly established and the local population has started to catch and consume them.

During visits to territories and through the distribution of technical publications, advice has been given on inland fisheries, transfers of trochus and mother-of-pearl shell, and coastal deep-sea fisheries. (South Pacific Commission, Annual Report, 1957, pp. 13-14.)

UNITED NATIONS

DEEP OCEAN TRENCHES UNSUITABLE FOR DISPOSAL OF RADIOACTIVE WASTE:

Beneath the oceans there are great valleys. Nineteen ocean "trenches" are over 4.5 miles deep and some are thousands of miles long. In the search for "burial grounds" for the disposal of radioactive wastes, which may become a problem when the atomic industry develops on a world-wide scale, those "trenches" seemed likely places. It was assumed that they were troughs of stagnant water. There, so the argument went, the dangerous elements, in their concrete-and-metal coffins, would lie undisturbed for centuries until their radioactivity was spent.

This assumption was questioned three years ago at the first United Nations International Conference on the Peaceful Uses of Atomic Energy. At the second meeting in Geneva, in September 1958, the illusion was finally dispelled.

In the intervening years the U.S.S.R. ship Vityaz carried out oceanographic investigations of 12 of these trenches. The findings of the expedition have shown that the trenches are unsuitable places for the disposal of radioactive waste.

At the conference, U.S.S.R. reported in detail on the Tonga Trench, which extends southward for nearly 700 miles from the Samoa Islands to the Kermadec Islands. The Soviet expedition found that, by comparison with the findings of the Danish Galatea expedition in 1952, the deep-water temperature had risen. This showed that even at the greatest depth a change of water takes place in as brief a space as five years. The distribution of oxygen and phosphates and the presence of living organisms consuming oxygen at every depth showed that the water was actively mixing, horizontally and vertically. Thus, the dangerous materials with long-lived radioactivity will be liable to break loose and escape upward into the upper layers of water. There marine life would become radioactively infected and form a biological chain reaction which would end up in the food of human beings.

This warning was reinforced, at the Conference, by the representative from the Woods Hole Oceanographic Institution (United States). He showed that there was a kind of biological elevator in the sea which would bring radioactive materials from the deeps to the surface. Sea organisms, he showed, concentrated the fission products so that the plankton in the Bikini test area of the Pacific had 470 times more radioactivity than the water itself.

In life, the marine organisms would pick up, concentrate, and transfer the radioactivity from the contaminated layers of the ocean to the uncontaminated. In death, the organisms would sink toward the bottom and the fission products, bound up in their skeletons, would increase the radioactivity in the depths. Thus there would be an upward and downward movement of radioactivity, apart from any mixing of the upper and lower waters. This drastically changes the picture which assumed that the transfer between the deeps and the surface would take about 300 years.

Both Britain and America have been dumping radioactive materials in the Atlantic trenches but of a kind and on a scale which so far gives no cause for concern. The British explained that the only material they had so far deposited was contaminated machinery from Harwell. The total amount of radioactivity deposited in eight years in the deeps, by the British, amounted to about 600 curies, an insignificant amount in dilution. The Americans have carried out regular surveys of their "ocean graveyards" and have found no evidence of any increase in the radioactivity of the water.

The disposal of radioactive liquid wastes in coastal waters is another matter. The British have had a long experience of disposing of this kind of "sewage" from their atom factory at Windscale in Cumberland. A pipeline carried the effluent two miles beyond the high-water mark into the Irish Sea. This is very mild radioactivity, since the main fission product wastes are concentrated and stored inland. The discharging into the sea is carried out under strict supervision of government inspectors and under public health regulations already established. To inspection at the source is added strict and continual hydrographic and biological surveys of the sea and the shoreline. As part of this program, over 35,000 fish were caught and marked and some recaught under a planned fishing program. These, like the edible seaweed and the sands of the shore, have given little indication of any increase in radioactivity which might cause concern.

The U.S.S.R. scientists at the Conference took a very strong line that no radioactivity of any kind should be disposed of in open waters, or on land, under any conditions in which it might seep into the ground water. They reported that even their mild effluent is run into concrete ditches and sealed off by concrete.

It was made abundantly and consistently clear that the disposal of waste so far has not been on a scale, or in circumstances, which constitute a present public health hazard.

International (Contd.):

The insistence of the many technical papers presented on this subject was on the precautions necessary for the future. What was emphasized was that a great deal more research must be done before any kind of "dumping" could be tolerated. The only safe method of storage is in tanks in which the radioactive substances are allowed to decay--and some of them will take centuries to do so. To the complications of storage is added the fact that in giving off their radiation the elements are producing heat which, in given circumstances, will cause the tanks to boil--and go on boiling for 100 years. (World Health Organization news release, November 1958.)

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GENERAL ASSEMBLY COMMITTEE APPROVES SECOND LAW OF THE SEA CONFERENCE:

A second international conference of plenipotentiaries on the Law of the Sea was approved by the Legal Committee (Committee Six) of the United Nations General Assembly on December 4, 1958. Meeting at United Nations in New York City, the Committee approved the second conference to be held at Geneva in July or August 1959. The purpose will be to determine the extent of territorial waters and fishing limits, which were left unsettled by the first international conference.

The final recommendation of the Sixth Committee, with the addition of one inconsequential amendment, was the same as the proposal of the United States and 10 other nations, and was approved by a vote of 42 for and 28 against with 9 abstentions.

An amendment, which did not pass, to the United States resolution supported by the Soviet Bloc and a majority of the Latin American Republics would have postponed any action and consideration of this matter until the next session of the General Assembly. This amendment was defeated by a one-vote majority, with 37 for, 38 against, and 5 abstentions.

It is anticipated that the General Assembly will endorse the meeting. The Committee felt that the conference would "contribute substantially to the lessening of international tensions. . ."

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GENERAL ASSEMBLY VOTES FOR SECOND LAW OF THE SEA CONFERENCE:

The United Nations General Assembly on December 10, 1958, voted to hold the second International Conference on the Law of the Sea in March or April 1960. This action, which amended the proposal of the Sixth Committee for an earlier meeting (summer of 1959), was adopted by a vote of 68 for, 6 against, and 3 abstentions. The United States voted for the amendment proposing the later date.

The move to hold the meeting at a later date was initiated by Mexico, Ecuador, and others. It is reported that one of the major reasons why the later date was desired by certain Latin American republics and others was that it gave them another meeting of the General Assembly and a February 1960 meeting of the Organization of the American States to prepare their positions for the second conference on the law of the sea.

WHALING

FIVE NATIONS DISCUSS DIVISION OF 1958 QUOTA:

Representatives of Great Britain, Norway, Russia, Holland, and Japan attended a conference held in London the latter part of November 1958. The conference was convened by Great Britain with the objective of securing an agreement for individual quotas rather than a global quota for countries whaling in the Antarctic.

The growing expenditure on whaling by Russia and Japan made the conference a critical one. These countries are mounting an increasing number of expeditions. The cost of one whaling expedition from Britain costs between £6-£8 million (US$16.8-22.4 million), and a poor catch can be disastrous. Japanese companies have the advantage of a large domestic market for whale meat for human consumption and of low wages. The Russian

International (Contd.):

fleet appears to be subsidized. Whale oil prices are falling because of lower margarine consumption and large supplies of other oils.

Unlike Japan, Russia is outside the existing agreement between Holland, Norway, Japan, and the United Kingdom, which limits the number of whale catchers to be used in the 1959 season. Norway has threatened to withdraw from the International Whaling Convention of 1946, and it is suggested Great Britain might do likewise, on account of the large cost of financing, which spells disaster if the catch is poor. If the total catch permitted can be equitably divided, this would not be necessary.

The London Daily Telegraph of November 17 suggested that the International Whaling Convention of 1946 might break down if Russia does not agree to a system of voluntary individual quotas for signatories of the Pact, rather than the existing global quota. It said the International Whaling Commission, of which 17 countries are members, has so far served its purpose of conserving whale stocks. But five nations were to meet on November 19 to discuss voluntary individual quotas, so as to avoid the race of each country against the other to get as many whales as possible before the global quota (15,000 blue-whale units) which exists at present is filled.

The Soviet Government on November 27 at the Conference agreed to a stipulated percentage of the total quota--one-fifth of the catch taken by the five nations.

In further consideration of the whaling problem, a four-man Norwegian delegation led by the Minister of Industries visited Moscow from November 3-6, 1958, to discuss Russia's plans to expand its Antarctic whaling fleets.

The Delegations attending the London Whaling Conference concluded their deliberations on November 27, 1958, and agreed upon certain recommendations to their Governments.

The recommendations would have effect for a 7-year period beginning with the 1959/60 Antarctic pelagic whaling season and include two important proposals. The first is that there should be an over-all limitation of the number of fleets operated by the five nations in the Antarctic. The U. S. S. R. would be able to add not more than three new factoryships to her existing fleet while the total number of factoryships operated by the other four countries would not be increased. The second is that the annual total catch authorized under the International whaling Convention of 1946 should be allocated between the five nations participating in the fishery. Twenty percent of the annual total catch would be allocated to the U. S. S. R.; and there would be further discussions about the allocation of the remaining 80 percent with a view to concluding an agreement before June 1, 1959, among the five nations which have taken part in the Conference.

The agreement would cease to have effect if any outside fleet should engage in Antarctic pelagic whaling under the Convention.

Australia

DEEP-WATER SHRIMP RESOURCES SURVEY PLANNED:

Extension of the survey of Australia's shrimp resources to deeper waters off the coast of New South Wales and Victoria is being considered. Giant tiger shrimp have been reported in these waters.

It is expected that during the next stage of the survey conclusive tests of the American balloon trawl will be conducted. (Australian Fisheries Newsletter, November 1958.)

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ECONOMIC FISHERIES SURVEY:

The Australian Fisheries Department is conducting an economic survey of the structure of the fishing industry, involving marketing research in all States, the Minister for Primary Industry announced recently.

Australia (Contd.):

The financial prospect for Australian fisheries provided cause for concern, he said. While the fishing industry supplied about half the fish eaten in Australia, with exports worth £5.5 million (US$12.3 million) a year, large numbers of fishermen claimed they could not operate at a profit.

On the other hand many housewives regard fresh fish as almost a luxury, and thousands of families in inland districts rarely eat salt-water fish.

"Many of our fishing grounds either have been fished out or are yielding relatively poor catches. . . We must try to find new grounds," the Minister stated.

"There is one branch of fishing that has hardly been tapped in Australia, though it could yield very substantial results. It is the netting of pelagic fish which are so much exploited in the northern hemisphere. In Australian waters they include tuna, sardines, jack mackerel, anchovies, and sprats.

"The demand in Australia for fish is growing with the rising population, many of whom are migrants from fish-eating countries. So there is a real potential for increased fish production, particularly of fresh fish.

"Despite the present crisis, our fisheries are an expanding industry. Australian fishermen have proved themselves people of considerable enterprise, and the Commonwealth Government aims to help them as much as possible," the Minister concluded.

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FISHERY PRODUCTS IMPORTS, 1957/58:

Australian imports of fish and fish products totaled 52,364,237 pounds, valued at £6,103,408 (US$13.7 million), in fiscal year 1957/58 (July 1, 1957-June 30, 1958). This was a rise of 31.0 percent over the 1956/57 imports of 39,969,215 pounds and was only slightly below the record of 52,406,380 pounds in 1955/56.

During 1957/58, import restrictions were eased on certain fish items, namely fresh and frozen, smoked, dried, and salted fish. The increase in fish imports is due to importers taking advantage of such relaxations.

Table 1 - Australian Fresh and Frozen Fishery Products Imports, 1956/57-1957/58

Country of Origin	1957/58	1956/57
	. . . . (Pounds)	
New Zealand. . .	6,341,165	7,860,397
South Africa . . .	6,215,048	6,111,174
United Kingdom	5,937,275	3,616,750
Denmark	2,256,604	659,888
Hong Kong	775,638	4,987
Norway	557,661	140,120
Japan	438,215	90
Netherlands . . .	268,334	124,505
China	159,418	15
Germany	104,691	11,204
Other	108,897	1/ 270,031
Total	23,162,946	18,799,161

1/ Includes 222,383 lbs. from Jamaica.

Imports of fresh and frozen fish accounted for 44.2 percent of total fishery imports--23.2 million pounds (valued at £2.2 million or almost US$5 million), a rise of 23.2 percent over 1956/57.

Table 2 - Australian Canned Fishery Products Imports, 1956/57-1957/58

Country of Origin	1957/58	1956/57
	. . . .(Pounds)	
Japan	6,382,784	5,531,211
United Kingdom	4,183,653	4,783,476
Norway	2,386,118	2,946,328
Canada	1,841,905	1,459,190
Germany	817,362	1,073,041
Portugal	576,614	437,185
U.S.S.R.	440,471	7,244
Morocco	106,357	96,405
Denmark	83,056	46,978
Netherlands . . .	68,147	36,974
Other	230,920	284,547
Total	17,117,387	16,702,579

Although New Zealand was still the principal country of origin of frozen fish, receipts from that country fell markedly during the year. This was more than offset by increased arrivals from the

Australia (Contd.):

visional agreement, pending a formal decision as to Australia's claim to control of the pearl shell beds beyond the three-mile limit, the Japanese have agreed to Australian control over all pearl-shell fishing off the Australian coast.

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NEW SOUTH WALES TUNA FISHING SEASON PROMISING:

Although quantities received early were fairly small, the tuna season on the South Coast of New South Wales was expected to be very good.

The Manager of the cannery at Eden said that from the outset of the tuna run in 1958 the fish had been much larger than at the same time in 1957. They had averaged about 25 pounds in weight, compared with 14 or 15 pounds early in 1957. Some fish of up to 35 and 40 pounds were being caught in 1958.

Another favorable factor was that more fishermen were engaged in catching tuna in 1958; from 20 to 25 boats were operating. The firm owning the Eden cannery had undertaken to receive 2,000 metric tons over a period, which would be a record quantity.

The tuna run began off Kiama about the first week in September 1958, and the fish were next caught out of the Coogee and Bondi areas of Sydney. Total catch to October 3, 1958, of 170 tons was greater than that to the same date in 1957 but well below the 280 tons to the same date in 1956. Small lots of tuna were coming from Bermagui waters and on October 2 two boats obtained about 11 tons 25 miles out of Moruya. (Australian Fisheries Newsletter, November 1958.)

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TASMANIAN SCALLOP FISHERY, 1958:

The estimated catch during Tasmanian's 1958 scallop fishing season of three months, May 1 to July 31, is in excess of 367 metric tons of meats. This represents a drop from the previous season (429 tons), but important developments have given reason for optimism about the future.

The Senior Inspector of Fisheries for Tasmania states that the scallop fishery shows a pattern of fluctuation over the years, probably brought about by the seasonal effect of spawning and settling of spat.

An interesting sidelight on the season's operations is provided by the Senior Inspector's references to the use of an English-type dredge.

Table 1 - Australian Scallop (Meats) Landings, 1945-58

Year	Quantity	Year	Quantity
	Metric Tons		Metric Tons
1958	367	1951	160
1957	429	1950	210
1956	516	1949	298
1955	511	1948	376
1954	373	1947	396
1953	332	1946	442
1952	145	1945	251

At the outset 65 boats were working in the Channel areas, where very good catches were made. The greater part of the catch from the older beds in the mid-channel consisted of scallops that had grown to size since the previous season's fishing.

In Great Taylor Bay, where heavy concentrations of young scallops were present during the preceding season, the shell was of better size, but roe not quite as advanced. This ground provided a large part of the total season's catch.

Toward the end of May 85 boats were engaged in all areas, with 70 operating in the Channel, 12 in Norfolk Bay, and 3 in Coles Bay on the East Coast.

As catches fell off, owing to the intensive fishing, several boats returned to spiny lobster fishing during June, and some moved to the East Coast scallop grounds and explored for new beds.

Norfolk Bay, which in 1956/57 maintained the greater part of the fleet, this year maintained about 10 boats only, with moderate scallop catches. The stocks worked over the past three years in this

Australia (Contd.):

United Kingdom, Denmark, Hong Kong, Japan, and Norway.

(4.4 million pounds) were the principal component items brought into the country and the chief suppliers were Japan, the United Kingdom, Norway, and Canada. Canned fish imports at 17.1 million pounds were considerably less than in many postwar years.

Table 3 - Australian Fishery Products Imports, 1945/46-1957/58

Fiscal Year	Total	Fresh and Frozen	Canned	Smoked	Salted	Other1/
	(Pounds)					
1957/58 . .	52,364,237	23,162,946	17,117,387	9,697,573	2,238,544	147,787
1956/57 . .	39,969,215	18,799,161	16,702,579	3,481,852	909,552	76,071
1955/56 . .	52,406,380	19,256,593	23,194,577	7,742,506	2,054,976	157,728
1954/55 . .	46,953,062	18,488,058	20,158,217	6,774,372	1,376,928	155,487
1953/54 . .	38,260,271	15,764,369	15,446,003	5,632,556	1,265,152	152,191
1952/53 . .	22,512,834	9,664,000	5,749,097	6,264,053	770,336	65,348
1951/52 . .	47,323,608	16,906,065	22,587,357	6,298,345	1,334,032	197,809
1950/51 . .	42,694,920	11,638,895	22,688,154	7,179,131	969,360	219,380
1949/50 . .	33,143,315	6,624,777	17,445,621	7,898,633	960,624	213,660
1948/49 . .	35,194,560	11,300,678	19,563,423	3,621,046	371,728	337,685
1947/48 . .	33,482,201	8,182,761	20,572,917	2,922,068	358,624	1,445,831
1946/47 . .	15,270,138	5,174,007	8,379,009	769,412	706,608	241,102
1945/46 . .	9,052,876	2,606,001	5,955,086	44,830	434,448	12,511

1/ From 1945/46 to 1948/49 includes oysters in shell and potted or concentrated (incl. extracts of, and caviar). From 1949/50 to 1957/58 only potted or concentrated products.

All States, except Tasmania, shared in this expansion of imports of fresh and frozen fish, but by far the greatest proportion went to New South Wales, Victoria, and Western Australia.

Canned fish imports increased 2.5 percent in 1957/58--from 16.7 million pounds, valued at £2.8 million (US$6.3 million) in 1956/57 to 17.1 million pounds, valued at £3.1 million (almost US$7.0 million). Salmon (6.8 million pounds), herring (4.6 million pounds) and sardines

Although both comparatively small items, smoked or dried and salted fish imports showed very large increases in volume and value in 1957/58. A marked rise in imports from South Africa largely accounted for the substantial rise in smoked and dried. (Australian Fisheries Newsletter, November 1958.)

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JAPANESE BANNED FROM TAKING PEARL SHELL OFF WESTERN AUSTRALIA:

The Australian Commonwealth Government announced in mid-November 1958 that Japanese pearl-shell fishermen had been banned from operations in the waters off Western Australia during the past season (ended about November 1). According to an official of the Commonwealth Fisheries Office, the ban's purpose was to conserve the Western Australian pearl shell grounds. A survey, started over a year ago, indicates that these grounds are becoming depleted.

The ban on the Japanese operations did not apply to the Australian pearl-shell fishermen. The Japanese were permitted to fish for pearl shell off the coasts of Queensland and the Northern Territory. The Government is expected to appraise the situation before the next season begins about May 1959.

The Australian State Governments control pearl-shell fishing within three miles of the coast, while the Commonwealth Government has control beyond that limit. The Japanese are not permitted to fish within the three-mile limit in any part of Australia. Under a pro-

Australia (Contd.):

area have been practically all mature scallops, with very limited amounts of young scallops, and it was not expected that the high catch rate of 1956 could be maintained.

Fortunately, many signs of young scallops have now been observed on all Norfolk Bay beds, indicating a good spawning in 1957, but it could be from 4 to 5 years before this young stock grows to market size.

The mainstay of the scallop industry, the D'Entrecasteaux Channel, cannot be expected to maintain the heavy concentration of boats that has taken place in recent years, but the grounds are by no means depleted, as many millions of young scallops in various age groups are present on the greater part of the worked beds.

An important development, which is encouraging for future years, has taken place on the East Coast, where some good spots were located and worked, during the last month of the season.

For the first time, good catches of very large scallops were taken at Maria Island. These were the largest scallops landed for many years. In some cases scallop meats taken from this ground weighed up to 4 oz. per scallop, cleaned weight.

The Coles Bay grounds were extended and good catches were made in from 12 to 14 fathoms. The usual depth at which scallops are taken is from 7 to 10 fathoms.

The new English-type dredge used by some boats has a decided advantage in deeper water, and apparently on the more uneven bottoms on the coastal strips. It also allows faster towing than the normal dredge. (Australian Fisheries Newsletter, November 1958.)

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TRAWLING COMPANY FORMED TO FISH IN GREAT AUSTRALIAN BIGHT:

The Federal Government has formed the Southern Trawling Company Ltd., with funds from the Fisheries Development Trust Fund, to commercially exploit the fishery resources of the Great Australian Bight. This Bight is a wide area off the south coast of Australia. It is the Government's belief that the venture will be a commercial success; if it is, private investors will be invited to buy out the Government's interest.

The new company will have a nominal capital of about US$1,124,000, with $337,000 for initial capital. An additional $247,000 will be loaned the company to purchase a modern Diesel trawler.

The Australian Government's Fisheries Development Trust Fund is specifically for the financing of fisheries projects which would not otherwise be undertaken. If the present project is successful, the loan will be returned to the Trust to finance other new projects. The fund was originally formed from the proceeds from the sale of a Government-owned whaling station.

Canada

BRITISH COLUMBIA FALL HERRING CATCH GOOD:

The British Columbia fall herring catch assumed record-breaking proportions. By November 1958 a total of 125,874 tons had been taken, an all-time record, compared with an average over the last four years of 52,400 tons. Even in 1955, when a record seasonal catch of 253,396 tons was taken, only 27,634 tons had been taken in that same period.

This remarkable run is attributed to good spawning and ocean conditions.

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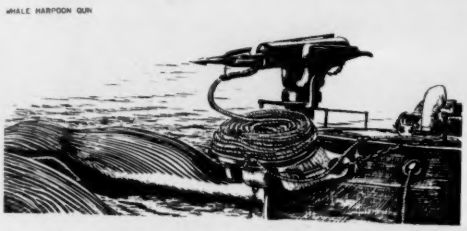
BRITISH COLUMBIA WHALE CATCH HIGHER FOR 1958 SEASON:

The landings of whales in British Columbia during the April 1-September 30, 1958, season increased to 774 whales as compared with 635 landed in 1957. The landings were made by six whale catchers operating out of Winter Harbour on the north end of Vancouver

Canada (Contd.):

Island. The season was cut short by bad weather on September 18.



Over 500 of the baleen-type plankton-feeding fin whales were captured. Other varieties included 114 bottom-feeding sperm whales and 8 blue whales. Other species found off the British Columbia Coast are sei and humpback whales.

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CAUSES OF FLUCTUATION IN STOCKS OF HADDOCK ON NORTH ATLANTIC BANKS:

Fluctuations in haddock stocks on North Atlantic banks could well lie with the variable ocean currents which sweep the haddock spawning areas. Eggs and larvae may thus be carried off into areas of great depth and perish in the millions. Although one female haddock may release from 100 thousand to two million eggs, the chances of growing to an adult stage are full of risks. This is the opinion of a St. John's (Newfoundland) Biological Station biologist speaking on the biology, distribution, and supply of haddock before representatives of the Newfoundland fishing industry at the first "open house" held in 1958 at that Station.

"Perhaps only one egg in 20 or 30 thousand or more may actually survive," the biologist said. "Many are eaten by predators at various stages of growth, many eggs may not be fertilized, and many more may drift off the grounds at the mercy of the ocean currents."

Fluctuations in the supplies of haddock on the St. Pierre and Grand Banks have for some years been accurately predicted by scientists at the St. John's Biological Station. At the present time the St. Pierre Bank is going through a period of low supply, but fishing continues to be fairly good on the Grand Banks and there is evidence of a new "brood" coming along which could maintain the fishery at a satisfactory level. Both the St. Pierre and Grand Banks depend on new year-classes of fish to replenish the populations and when, for various reasons, spawning is unproductive, a decrease in the stock can be foreseen a few years ahead.

Haddock grow much more slowly on the Grand Banks than the races found on more southerly grounds, such as Georges Bank. For example, a 3-year-old haddock on Georges Bank averaged about two pounds, while one of the same age on the Grand Banks weighed about one-half pound. (Trade News, October 1958, Canadian Department of Fisheries.)

* * * * *

ILLEGAL LOBSTER FISHING ATTACKED:

Reports by Canadian fisheries officers indicate an upswing in illegal lobster fishing on the Canadian Atlantic coast. The prosecutions and confiscations in 1958 as of September were almost level with the total for all of 1957. Prosecutions for violations of fisheries regulations--most of them involving illegal lobster fishing--came to 718. There were convictions in all but 12 cases. Fines levied in all convictions totalled more than C$12,000.

For years the Department of Fisheries has been waging a campaign to encourage compliance with and enforce lobster laws.

In the Maritimes there are more than 17,000 lobster fishermen. With planes, patrol boats, and automobiles fisheries officers carry on practically a seven-day-week around-the-clock battle to protect the industry which in 1957 put more than C$12,300,000 into the pockets of fishermen. Lobsters are by far the most valuable segment of the multimillion dollar fishing industry in the three Maritime Provinces of Canada.

There are no accurate figures on the number of illegal lobsters caught, but, judging from the thousands of illegally-caught lobsters liberated each year by fishery officers, the take by poachers is a substantial one.

Abetted by certain unscrupulous operators, poachers have built up a thriving black-market trade in poached and undersize lobsters. The bulk of the illegally-caught lobsters usually end up in cans. Dozens of outlaw makeshift canneries have been operated in isolated spots where poachers can their lobsters. However, some licensed canneries continue to contribute to the racket by handling illegal catches. What makes the lobster black market successful is the heavy demand from Halifax to Vancouver.

Since without the cooperation of cannery operators black-market lobster operations would not be profitable, fisheries officers keep close tabs on canneries.

The Department of Fisheries is using a two-bladed weapon in its war against poaching--law enforcement and education. By the latter, the Department hopes to convince all fishermen that conservation laws are to protect fishermen and the industry.

Officials of the Department feel that as fishermen become more aware of the need for conservation to protect their future, wholesale poaching will subside. Poachers comprise only a tiny minority of the mass of fishermen, and most le-

Canada (Contd.):

gitimate fishermen are behind the Government's effort to ensure a healthy lobster industry that leaves millions of dollars in the Maritime Provinces every year. (Trade News, October 1958.)

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NEWFOUNDLAND FISHERMEN AIDED BY FEDERAL GOVERNMENT:

Early in November 1958 the Canadian Minister of Fisheries announced that the Federal Government in cooperation with the Newfoundland Provincial Government would build 20 fishing stages in Newfoundland. The estimated cost of C$500,000 will be borne by the Federal Government. This aid serves a two-fold purpose: (1) it provides winter work for fishermen in the communities where the 1958 fishery had suffered worst, and (2) it brings about a more efficient and economical fishery operation.

The plans call for the erection of a community stage consisting of a building and a wharf. Each stage is to be used by 10 or more groups of fishermen. The building will contain working space for each fishing group, and will enable them to produce and store fish under better conditions, thus raising the quality. It is thought this plan will also facilitate shipping since a community's production will be available at one point.

During a visit to St. John's, Newfoundland, the Minister of Fisheries indicated these stages would be built in the communities of Sandy Cove in the Straits of Belle Isle, Conche, Fluer de Lys, Coachman's Cove, Pacquet, Beaumont, Triton, and Leading Tickles, in Notre Dame Bay; Crow Head and Lower Jenkins Cove on Twillingate Island; Deep Bay and Island Harbor on Fogo Island; Musgrave Harbor, Lumsden, Cape Freels, and Summerville in Bonavista Bay; Bonaventure in Trinity Bay; Lower Island Cove in Conception Bay; Point Lance and Little Paradise in Placenta Bay. All these communities are situated on the northeast, and east coasts of Newfoundland, with the exception of two which are on the south coast. These communities were chosen over others because they serve a larger number of fishermen, the economy of the area justifies their need, and they have a better future. The Minister stated during his discussion with the Fish Trades Association and members of the Provincial Department of Fisheries that if these stages proved successful, others would be built. He also said other schemes to aid the Newfoundland fishery, which is reported to be in the worst state in 50 years, are under consideration.

During 1958 the Federal Government has provided several other types of aid for the Newfoundland fishery as follows:

In an effort to solve the ever-present perplexing bait distribution problem, the Federal Government in October introduced on a trial basis four mobile bait lockers. These electrically-operated lockers, costing about C$6,500 each, have a capacity of 20,000 pounds and can be dismantled and moved to any area where the bait shortage is most acute. Two refrigerator trucks have also been provided to truck bait from freezing depots to holding units.

Also during 1958 the Federal Government purchased approximately one million pounds of bait from the United States, Nova Scotia, and a European country. While it has not been possible to learn the cost of the bait, it is being sold to fishermen at four cents a pound. This probably represents cost price.

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RESEARCH SHOWS DECLINE IN OCEAN PERCH RESOURCES:

The fisheries research scientists of Eastern Canada are not too happy about the future of the ocean perch fishery in North Atlantic areas where Newfoundland draggers, and others, now operate. This is due to the slow growth rate of this species and the poor survival rate of ocean perch larvae. A St. John's Biological Station biologist made this observation to representatives of the Newfoundland fishing industry at the first "open house" staged in 1958 at that Station.

However, the biologist expressed the hope that further exploratory fishing based on knowledge already gained by the Fisheries Research Board of Canada would locate new fishing areas that would enable the fishery to continue on a profitable basis.

Research on ocean perch has been extensive in Newfoundland since that species became of commercial significance there in 1946-47, with the advent of the dragger fleet. An extensive program of exploratory fishing was conducted and ocean perch were found in commercial quantities in three comparatively nearby areas: the eastern and southwestern slopes of the Grand Banks, the Gulf of St. Lawrence, and in Hermitage Bay. These have continued to be the main source of ocean perch for the Newfoundland industry. Promising results had also been obtained through exploratory fishing north of the Grand Banks, at Flemish Cap and off southern Labrador, but these findings had not yet been followed up by the Canadian commercial fishing fleet. At Flemish Cap large Russian factoryships are reported to be carrying out highly successful operations. (Trade News, October 1958, Canadian Department of Fisheries.)

Chile

REGULATIONS FOR FOREIGN VESSELS FISHING IN TERRITORIAL WATERS ISSUED:

In decree No. 946 of November 12, 1958, the Chilean Ministry of Agriculture set forth the procedure to be followed by the owners of foreign vessels desiring to fish in Chilean waters. It stipulates that permits will be issued for a

Chile (Contd.):

maximum period of 3 years and will not be renewable. Upon the expiration of a license, a foreign fishing vessel will have to depart from Chilean waters or be nationalized under the Chilean flag.

This decree sets forth the procedure whereby owners of foreign fishing vessels may apply for fishing permits, but the cost of the permit is not specified. It is believed that a regulation setting forth this detail and some explanations of procedure not included in the present decree will have to be published later.

The decree also specifies that fishing vessels of wood, to qualify for the issuances of fishing permits, must be no more than five years old, and no more than 10 years old if of other material.

Colombia

EXPANSION OF SHRIMP EXPORTS PLANNED:

A plan to develop the Colombian shrimp exporting industry to earn about US$4 million annually was revealed in November 1958 by the Minister of Agriculture. The plan includes increased loans to the shrimp fishing companies, the construction of net-making plants, expansion of freezing facilities, and more effective policing of territorial waters to guard against illegal fishing. The Minister stated that technical advisors from the Food and Agriculture Organization will be sent to advise the Government on the plan.

Cuba

CONVENTION WITH THE UNITED STATES ON THE CONSERVATION OF SHRIMP RATIFIED:

Press reports indicate that the Cuban Senate on November 19, 1958, ratified the Convention signed on August 15, 1958, by the United States Ambassador and the Cuban Minister of State, for the conservation of shrimp in the Gulf of Mexico.

The Cuban Ministry of State confirmed the above information verbally and informed that the Ministry would be shortly ready to prepare the necessary instruments of ratification to be exchanged with the United States Government. The Convention will be considered by the United States Congress during the session which begins in January 1959.

Note: Also see Commercial Fisheries Review, October 1958, p. 44.

Egypt

MOTOR VESSELS ENGAGED IN FISHING:

The number of Egyptian fishing vessels equipped with power in 1958 totaled 486. Of these vessels, a large majority are sailing vessels equipped with auxiliary power, according to a November 3, 1958, dispatch from the United States Consulate in Alexandria.

Egyptian Motor Fishing Vessels by Type and Port

	Sardine Vessels	Vessels other than Sardine
	.....(Number).....	
Alexandria . .	-	66
Port Said . . .	54	61
Rosetta	65	-
Damietta . . .	210	-
Suez	-	30
Total . . .	329	157

Fiji Islands

DEVELOPMENT OF FISHING INDUSTRY PROPOSED:

Proposals for a fishing industry in the Fiji Islands are made in a report of a committee set up in 1957 by the Fiji Government following a survey carried out by a South Pacific Commission fisheries officer.

The report recommends that a fisheries officer be appointed to advise on and supervise the development of sea and inland fisheries.

Other suggestions include encouragement of long-line tuna fishing, the estab-

Fiji Islands (Contd.):

lishment of a fish cannery, and the provision, with Government assistance, of refrigeration facilities for bulk storage of fish. (Pacific Islands Monthly, October 1958.)

Note: Also see Commercial Fisheries Review, June 1957, p. 41.

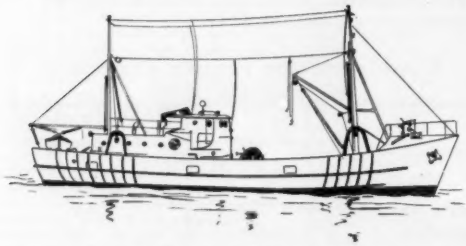
France

NEW-TYPE SMALL TRAWLER BUILT:

A new type of small trawler with a number of interesting features was completed recently in France. It is to fish in the Atlantic on trips of 2 to 3 weeks' duration.

Her principal dimensions are as follows: length between perpendiculars 76 feet 3 inches; length over-all 87 feet; breadth, moulded 21 feet 10 inches; depth, moulded 12 feet; and draught (light) 11 feet.

The hull is of 8-millimeter (5/16-inch) steel plate, electric-welded throughout; the deck is covered with 2.5-inch teak-iroko.



All accommodations are located aft--skipper's cabin, two officers' cabins, an 8-berth crew's quarters and galley with sink and oil-fired cooking range. There is also a washroom and shower for the crew, to which water is pumped electrically, under pressure. All living quarters are heated by a by-pass from the engine cooling system, which also supplies a hot-water tank for washing purposes.

The fish hold, which has a capacity of 3,531 cubic feet, is insulated from the plating and engineroom by expanded polystyrene, the fish-hold deck being of cellular concrete and cork. It is lined throughout with a corrosion-resistant aluminum alloy, the shelves and stanchions being of the same material. Refrigerated air, at a temperature of 32-37.4° F. is circulated transversely across the fishhold and over the shelves. The refrigerator equipment is duplicated in case of failure, one compressor being driven from the main engine, the other by the auxiliary. The refrigerant is Freon 12. Forward of the fish room is space for net storage.

Main propulsion is provided by a supercharged 375 hp. Diesel engine at 500 r.p.m., and fresh-water cooled on a closed circuit. This drives the propeller through a reverse-reduction gearbox having two ahead speeds; 280 propeller r.p.m. for steaming, and 220 r.p.m. for trawling, thus enabling the engine to work at maximum efficiency necessary under both conditions. The gear box can be operated both from the engineroom and wheelhouse, and is interlocked with the engine throttle to prevent misuse. Starting is by compressed air, and both main and auxiliary engines can recharge the cylinders.

The main engine also drives the trawl winch via a belt, the winch having a capacity of about 800 fathoms of 0.71-inch diameter warp on each drum. An independent engine throttle control allows this to be driven when the propeller is stationary.

The auxiliary Diesel engine, which develops 17 brake horsepower at 15,000 r.p.m. also drives one of the two 3 kw. 24 v. generators, and two service pumps.

Provision is made for an alternative main engine installation of up to 450 brake horsepower and for an optional fish-hold arrangement without refrigeration, and with the light alloy replaced by plastic. (World Fishing, November 1958.)

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SARDINE CANNING INDUSTRY, 1957:

Total landings of sardines in France (excluding territories) during 1957 amounted to about 14,513 metric tons. Of this total, Atlantic coast canneries used 6,100 tons and Mediterranean coast canneries used 7,100 tons.

The canneries produced about 330,000 cases of canned sardines of French origin in 1957. They also canned about 370,000 cases of imported sardines.

France's total production of canned sardines in 1957 amounted to about 700,000 cases. Adding 1,700,000 cases canned in 1956, we arrive at a total of 2,400,000 cases for 1956-57, or an average annual production of 1,200,000 cases. This quantity was ample for satisfying the demand for domestically-packed sardines. (Industria Conservera, Vigo, Spain, September 1958.)

French West Africa

TUNA FISHING AND CANNING INDUSTRY:

Dakar's ample refrigeration facilities have been a key factor in the success of the tuna industry in French West Africa. In 1957, more than 3,000 metric tons of tuna were frozen and shipped to the French mainland and 4,000 tons were stored at -18° F. for later shipment.

There are several tuna canning factories in Dakar. Some are subsidiaries of French canning firms and others are owned by local interests. These factories canned a total of 1,567 tons of tuna in 1957.

French West Africa (Contd.):

Despite the danger of saturation of the French mainland's tuna market, Dakar's tuna fishing industry is being expanded. Backed by the enormous fishery potential of French West Africa, France seeks to become the leading provider of tuna to other members of the European Common Market. (Industria Conservera, Vigo, Spain, August 1958.)

German Federal Republic

CANNED FISH PRODUCTION DECREASES IN 1957:

The value of canned fishery products manufactured in the German Federal Republic decreased from 321 million deutsche marks (US$76.4 million) in 1956 to 304 million marks ($72.3 million) in 1957. The two principal causes of the decline were fluctuations in the supply of fish and a shortage of manpower.

According to official statistics, the production of canned fish in 1957 amounted to only 37,000 metric tons as compared with 46,000 tons in 1956. Production of pickled fish also dropped from 61,000 tons in 1956 to 57,000 tons in 1957. Smoked fish production decreased from 28,000 to 25,000 tons.

The German fish canning industry has also suffered from foreign competition. In 1957, Germany imported 12,000 tons of canned sardines in oil and 4,900 tons of other canned fish--mostly Japanese tuna. (Industria Conservera, Vigo, Spain, September 1958.)

Note: Values converted at rate of 1 deutsche mark equals US$0.238.

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FIVE FISH-PROCESSING TRAWLERS TO BE BUILT WITH AID OF SPECIAL FUND LOANS:

The West German Minister for Federal Economic Assets has announced that loans amounting to DM6 million (US$1,432,000) will be provided from the European Recovery Program Special Fund for construction of five trawlers equipped for fish-processing. The costs of each vessel will be about DM3.5-4.0 million (US$835,000-955,000). The vessel owners will have to raise 20-25 percent of the costs and one-third will be covered from the Special Fund. The balance will be financed via open capital market. Funds from the Federal Budget will be used to subsidize interest payments charged on these loans, reports the United States Embassy at Bonn, November 21, 1958.

Greenland

LOAN TO BUY FACTORYSHIP FOR SHRIMP CANNING REQUESTED:

A loan of 350,000 kroner (US$50,673) to buy a factoryship to be used to catch and can shrimp in Greenland waters was requested recently by the Danish Minister for Greenland from the Danish Commission of Finance.

It is estimated that the loan could be repaid after only three fishing seasons provided the factoryship's case pack during each season amounts to at least 300,000 cases of shrimp. This is only half of the production capacity of the vessel since it is based on only a six-months fishing season.

Biological studies have shown that Greenland's shrimp resources are plentiful, which leads to the conclusion that the factoryship would operate successfully. (Industria Conservera, Vigo, Spain, September 1958.)

Iceland

FISHERY TRENDS, JANUARY-SEPTEMBER 1958:

Iceland's fish catch and the production of processed fish January-September 1958 was much higher than in the same period of 1957. Contracts for salted herring from the main North Coast season have been filled, and although the fall season for drift-net herring has been poor, herring again appeared in late October. The trawlers were getting good catches of ocean perch. The United States market improved, and exports to Russia diminished, though partly offset by rising exports to the Russian satellites.

A major problem involved in the proclamation of a 12-mile limit was that of establishing regulations for Iceland's own fleet of 44 trawlers. When the limit was extended to

Iceland (Contd.):

4 miles in 1952, the enclosed area (including the whole of Faxa Bay) was closed to Icelandic and foreign trawlers without discrimination. Throughout the past summer a committee of trawler and motorboat representatives were endeavoring to agree on the degree to which the Icelandic trawlers should be allowed to fish within the new 12-mile limit after the proclamation on September 1, 1958.

Despite the restrictions on Icelandic trawler fishing, the trawlers (now mostly owned by municipalities) in 1958 enjoyed a far better season than in 1957. Their costs have risen, both for gear (because of the 55-percent exchange surcharge) and for wages, which have gone up a total of 21 percent since May 1958, including contributions of 6 percent to an unemployment insurance fund. But this has been more than offset by the fact that they have now been placed on an equal footing, as regards price, with the motorboats; the Export Fund Act of May abolished the old discrimination and granted a flat 80-percent support level to motorboat and trawler fish alike.

This together with improved catches has resulted in a condition where some trawlers are actually making money, whereas in 1957 they lost money. And the trawler owners have a different attitude towards new vessels.

Labor for the trawlers will be a real problem in January 1959. The Faroese Seamen's Union called its members off the Icelandic vessels last spring, after the winter season, in protest against the 55-percent surcharge on foreign exchange in the Export Fund Act. While most of these foreign seamen return home anyway at the end of the cod season, a proportion has always remained to work and the Icelandic trawlers, by paying higher wages, have found that they could man their vessels with native crews. But they will be hard pressed for crews in January, when they normally lose men to the motorboats for the main cod season.

The motorboats themselves have been having a somewhat harder time. The 80-percent support level was calculated on the basis of a 5-percent wage increase, as specified in the law, and while the motorboat operators have not yet granted seamen the full equivalent of what the trawlers are now paying, wages are already well above what had been anticipated in May 1958 and will have to rise further before the winter fishing season. It is considered virtually certain that the 80-percent support level will have to be raised.

The Icelandic fish catch of all types of white fish combined for the first nine months of 1958 was up 21 percent over the same period in 1957. As for herring, the fact that the total tonnage of herring was 10.6 percent lower than last year for the same period was less significant than the fact that herring of salting grade was up by 88 percent, so that the value of the herring catch as a whole was definitely higher in 1958.

The main herring season, off the North Coast during the summer months of 1958, was definitely better than in 1957. The improvement in the volume of herring of salting grade more than offset the reduction in the total tonnage of all herring, which was only 77,842 metric tons through August 31, 1958, as compared to 100,138 tons at the same date in 1957. All advanced sale contracts for salted herring were filled.

The secondary herring season, carried on in the autumn with driftnets off the Southwest Coast, was again disappointing in 1958, and for a month from mid-September the herring virtually disappeared, after only 35,000 barrels had been caught to fill advance contracts of 85,000 barrels to the U.S.S.R., Poland, and East Germany. But towards the end of October the herring appeared again off the Reykjanes peninsula, and the Icelanders believed that there was a chance of filling the contracts.

The output of the freezing plants was higher in 1958. By October 15, production had reached 62,310 tons of white fish fillets (cod, haddock, ocean perch, and flounder) for all Icelandic plants, whereas only 55,649 tons had been produced during the whole of 1957.

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NEW PROCESSING PLANTS PROPOSED TO GOVERNMENT:

Proposals have been submitted to Iceland's Althing to establish a canning factory in Akureyri and another for the canning of spiced herring in Siglufjordur, for the purpose of utilizing sardine-size herring.

There also has been discussion of a proposal by a freezing plant in Isafjordur to acquire a United States shrimp peeling machine to permit further development of the ample shrimp beds off the northwest coast of Iceland (U. S. Embassy in Reykjavik, November 21, 1958).

Indonesia

EXPERIMENTAL LONG-LINING FOR TUNA IN INDIAN OCEAN:

Experimental long-line fishing for tuna was tried by Indonesians in the Indian Ocean near Tapanuli, Northwest Sumatra, with the Bima, a motor vessel of 20 tons capacity. The catch in 3 trips totaled 23,500 pounds, valued at Rp. 32,251 (US$1,100). It consisted of 256 tunas, sharks, and sailfish, (FAO Indo-Pacific Fisheries Council Current Affairs Bulletin, July 1958.)

Iraq

TERRITORIAL WATERS EXTENDED TO 12 MILES:

On November 16, 1958, the Government of Iraq issued a decree claiming sovereignty over Iraqi waters and sea bed of the Persian Gulf up to 12 nautical miles from the low-tide mark. The decree provides that conflicts with territorial waters of other states shall be settled by negotiation.

Israel

SARDINE FISHERMEN PROTEST NEW JAPANESE-ISRAELI TUNA FISHERY:

The landing of the first catch of 240 metric tons of tuna by the newly-estab-

Israel (Contd.):

lished Japanese-Israeli fishing company at Kishon Port was preceded by demonstrations and threats from Israeli sardine fishermen, who believed the new fishery endangers the sale of sardines. The Government has imposed on tuna landings a levy of IL70 (US$39) a metric ton, but the sardine fishermen gave way only after the company promised to sell not more than one-third of the catch to canneries, while the remainder would be marketed fresh.

The sardine fishermen, limited in the scope of their activities, are afraid of competition from the new group, which can fish in Atlantic waters. The local sardine fishing industry has enjoyed considerable encouragement from the Government, although the sardines are only fair quality (U. S. Embassy in Tel Aviv, November 14, 1958).

Italy

JAPANESE VESSELS LAND ATLANTIC-CAUGHT TUNA:

Some of the 15 Japanese long-line vessels engaged in fishing for tuna in the Atlantic have landed their catches in Italy. These vessels include some newly-constructed additions of 1,000 gross tons which have a large radius of operation.

The Japanese vessels began fishing during the first months of 1957. Their total catch of tuna in 1957 in the Atlantic amounted to about 10,000 metric tons. Some of the catch landed in Italy was packed by Italian canneries. (Industria Conservera, Vigo, Spain, August 1958.)

Japan

FIRST ATLANTIC TUNA LONG-LINER RETURNS TO HOME PORT:

The 700-ton tuna long-liner No. 30 Hoko Maru (completed early in November 1957) returned to Japan on December 4, 1958, from a maiden voyage to the Atlantic that lasted nearly 13 months. Considerable interest has been accorded the report of the Hoko Maru's captain, for although tuna fishing by Japanese boats in the Atlantic is no longer news, the vessel is said to have been the first to engage in what are now called, perhaps by analogy with billiards, "cushion landings" in Panama for export to the United States.

According to the captain the vessel's first two trips were made in the Gulf of Guinea. On each trip of about 36 days of long-line fishing, she took a full trip of 400 metric tons of tuna, which was delivered at Venice, Italy. The third trip was made off northeastern Brazil, and this is believed to be the trip that was landed at Cristobal, Panama. After fueling at Curacao, the Hoko Maru tried fishing in the Caribbean, but with poor results, and finished the trip off the Guianas, and in 38 days of fishing caught a full trip to bring back to Japan.

The Atlantic grounds, as presently known, extend in a narrow belt along the Equator from Africa to South America, and are not very extensive. When Japanese boats began fishing there in the spring of 1957, catches ran around 13 tons a day, but late in that year they were down to 7-9 tons, and at present they are only 5-7 tons. The average size of the yellowfin tuna, now 125-139 pounds, seems to be declining also, as the number of boats fishing the ground increases. Fishermen think that, at the present rate of exploitation, the ground may be good for 5 or 6 more years, after which its future looks dim. The catch is said to be 80 percent yellowfin, the rest being made up of big-eyed tuna, albacore, and bluefin; marlin are so scarce as to be no problem.

The captain was of the opinion that Cristobal is an ideal place for transshipment landings, because of its proximity to the fishing grounds and the fact that it is a customs-free zone. On the problem of vessel size, although there has recently been a trend away from very large tuna boats in Japan, the captain felt that 500 tons gross is about the minimum size practicable for such long cruises, with

Japan (Contd.):

500-700 tons perhaps the most economical size range for Atlantic operations.

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GOOD RICE CROP MAY ADVERSELY AFFECT TUNA EXPORTS TO ITALY:

Frozen tuna exporters fear that a side-effect of the fourth consecutive heavy Japanese rice crop will be a downward turn in what has been a growing tuna export trade with Italy. For fiscal year 1958 the export quota for frozen tuna to that country was 10,000 metric tons, of which 7,500 tons were bartered for Italian rice, the rest being paid for in cash. During Japanese fiscal year 1959 (April 1959-March 1960), payment for all tuna exports to Italy will have to be covered by barter arrangements, according to trade sources.

On November 25, 1958, the Japan Frozen Food Export Association is reported to have petitioned the Fisheries Agency and Ministry of Trade and Industry to use their good offices to assure the import of 20,000 tons of Italian rice in Japanese fiscal year 1959 and the allocation of 70 percent of the value of the rice for the barter of tuna (about 7,000 tons of tuna). The exporters believe that there are prospects of bartering an additional 5,000-6,000 tons of tuna for other goods, and they thus hope for a total export quota for Italy of 12,000-13,000 tons of frozen tuna in fiscal year 1959. The exporters also wanted the decision on export licenses for this trade to be made in December 1958 at the latest, since the bulk of the exports are made directly from tuna-fishing vessels operating in the Atlantic, and operational plans for these vessels must be made well in advance.

It is reported, however, that the Japanese Government is strongly inclined to cut fiscal year 1959 imports of Italian rice to one-third of the 30,000 tons for fiscal year 1958. The Food Agency, which controls such imports, gives as its reasons the large Japanese supply resulting from four years of bumper crops, declining sales of foreign rice in Japan, and the fact that imports of 30,000 tons in 1958 did not bring about a corresponding stimulation of export trade to Italy.

Unless the Food Agency modifies its stand, tuna exporters expect that fiscal year 1959 exports of frozen tuna to Italy will be 9,000 tons at best. The annual demand for tuna in Italy is estimated at 25,000-30,000 tons, and of this total the Japanese believe that they could supply 20,000 tons, if they had no export licensing problems. They fear that if their quota is cut for fiscal year 1959, a larger share of the market will be taken over by competing suppliers in Spain, Portugal, and Norway.

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TUNA LOIN SALES, OCTOBER-NOVEMBER 1958:

The Japan Frozen Food Export Association announced that from October 1 to November 24, 1958, sales of frozen tuna loins to United States and Canadian canners had reached a total of 1,324 short tons. This product had been under a Japanese export embargo for about one year until its export was reopened in October, at which time a tentative export quota of 3,000 tons was set for the remainder of the Japanese fiscal year through March 1959.

The loins for which sales contracts have been made since the lifting of the embargo were almost evenly divided between albacore and yellowfin tuna. About 40 percent of the loins (487 tons) were sold in California, 727 tons to Pacific Northwest packers, and 110 tons to Canada. The Maryland packer, who previously was the only important buyer of frozen tuna discs, is reported to have placed no orders since the embargo ended. Prices per ton f.o.b. for loins are US$850 for albacore, $640 for yellowfin under 100 pounds, and $620 for yellowfin over 100 pounds.

Republic of Korea

PROGRESS IN PACKING PROCESSED FISHERY PRODUCTS MADE:

Korean laws relating to processed fishery products have been reviewed by a

Republic of Korea (Contd.):

United States advisor. He then assisted in the preparation of a series of regulations setting up minimum quality, sanitary, and export licensing requirements for fish-processing establishments and certain frozen fishery products. These are being proposed for promulgation as ministerial orders to improve quality of processed fishery products and to assure first-quality products for export.

Plans were also made for developing a short course to train fish canners in plant sanitation and equipment maintenance. Recommendations were made to broaden the service of the Central Fisheries Experimental Station and the Central Fisheries Inspection section.

Some 4,500 pounds of frozen shrimp were packed commercially under the United States 8th Army inspection regulations and the first contract was awarded by the Army for the purchase of local fishery products for military and United States civilian consumption in Korea.

Under supervision of a fishery advisor, six cases of frozen and canned fishery products were prepared at the Central Fisheries Experiment Station and shipped to Honolulu as samples for establishing an export business. The shipment consisted of octopus, cuttlefish, scup or porgy fillets, flat fish fillets, dressed horse mackerel, headless shrimp, and peeled and headless shrimp.

Mexico

EXPORT DUTY ON FROZEN SHRIMP INCREASED:

The export duty on frozen shrimp was increased 0.5 percent ad valorem by a new decree published in Mexico's Diario Oficial of November 22, 1958 (effective November 25, 1958). The decree applies to export tariff items 041.00.11 (frozen shrimp) originating in the Gulf of Mexico, Salina Cruz, Oaxaca, and Santa Rosalia, Baja California; and 041.00.12 (frozen shrimp) originating in other regions. It establishes a duty rate for both items of 2.50 pesos per 100 kilos net weight (about 9.1 U. S. cents a 100 pounds), plus 4.5 percent ad valorem. The previous rate on both items was 2.50 pesos per 100 kilos plus 4 percent ad valorem.

On the basis of the official valuation of 1,700 pesos per 100 kilos (about 62 U. S. cents a pound), the effect of the new measure will be to increase the applicable duty from 70.50 pesos to 79.00 pesos per 100 kilos (from 2.6 to 2.9 U. S. cents a pound), an increase of 12 percent.

In 1957, frozen shrimp ranked sixth among Mexican exports, with a total value of 274.5 million pesos (about US$22 million) exported in that year. This product ranks in about tenth place among Mexico's exports during 1958, the United States Embassy in Mexico City reported on November 25, 1958.

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FISHING FLEET INCREASES IN SIZE AND NUMBER:

From March 1957 to June 1958, the Mexican shrimp fleet increased 40 percent from 790 to 1,107 vessels. On June 30, 1958, according to the Mexican Bureau of Fisheries and Allied Industries, the Pacific shrimp fishing fleet had 663 trawlers and 4 freezerships and the Gulf of Mexico fleet had 440 trawlers. The increase for the 15-months period was 185 boats (38 percent) in the Pacific and 132 (43 percent) in the Gulf of Mexico.

Some of the new vessels were purchased in the United States, but most were built in Mexico. The Pacific fleet has been augmented not only by imports and construction, but also by transfer of vessels from the Gulf--mostly to Salina Cruz, Oaxaca, where the fleet was reported to have more than 90 vessels as of December 1, 1958.

The boom in shrimp-trawler building has ceased; only replacements are now on order in Mexican shipyards. The decree published on March 31, 1958, which placed a high duty on imported motor-driven boats 35 meters (about 115 feet) and less, has effectively stopped imports. Probably

A typical Mexican shrimp trawler.

Mexico (Contd.)

more important than the decree in this regard has been the biological potential of the shrimp populations. The purchasers of shrimp boats neglected to consider this potential and, as a consequence, although 1958 can be considered an average year for shrimp production for the Mexican fleet in the Gulf of Mexico, the catch per vessel has dropped. For this reason a number of vessels have been transferred to the Pacific Coast where there has been a better than normal year. Unless the populations of shrimp on the Pacific Coast continue producing above average it is likely that 1959 may see the Pacific fleet in trouble.

As of June 30, 1958, the Mexican Bureau of Fisheries had registered 7,762 fishing boats. This was over 3,500 more boats than had been registered by the same date in 1957. However, the number of boats registered on any particular date, other than at the end of the year, is not particularly significant since the registrations are seasonal and valid for one year. It is estimated that when registrations are completed for the year, the number of fishing craft will be about 9,000 as compared with 8,566 registered in 1957. Comparison of new construction by tonnage classes indicates a trend towards larger vessels. The number of vessels in the 10-50 net ton group registered between January 1-June 30, 1958, increased about 18 percent and vessels in the 50-100 net ton class increased by 19 percent.

About 80 percent of the Mexican fishing fleet consists of boats of 3 net registered tons or less. These are principally dugout canoes and skiffs, many of which are powered with outboard engines. They are used primarily in the taking of shrimp with cast nets, lobsters with traps, abalone with diving equipment, and subsistence fishing with cast nets and beach seines.

Boats between 3 and 10 tons, many of which are open launches, operate in the bays, lagoons and esteros, and along the beaches. This fleet, which generally uses beach or haul seines, provides most of the market fish caught in Mexico.

Most of the vessels 10 and 100 tons are shrimp trawlers using otter trawls. The double-rig trawl is becoming more and more popular in Mexico.

Vessels larger than 100 tons are used for catching tuna, sardines, and mackerel, and also for catching and freezing shrimp.

Norway

MORE FISHERY PRODUCTS
FROZEN IN ALGINATE JELLY:

A number of Norwegian processors for several years have been freezing mackerel fillets in alginate jelly in order to increase their storage life. Later, herring and herring fillets were frozen by the same process. Freezing in alginate jelly has now also been adapted for processing whale meat for human consumption. Whale meat is frozen in blocks of 44 pounds, which are then cut in one-pound blocks. Each block is glazed in alginate jelly, wrapped in cellophane, and packed in consumer cartons. A Norwegian firm has established a large export market for whale meat preserved in alginate jelly.

Freezing in alginate jelly is claimed to protect products from dehydration and rancidity, and to preserve the natural freshness, flavor, and color of the products for an indefinite time.

In the bait-herring industry, the results obtained by the alginate freezing method are surprising. Two-year old bait herring frozen in alginate jelly has proved to be equal to newly-frozen and not stored bait herring. The method has also been adapted for the export of brook trout. Another Norwegian firm has exported dogfish glazed in alginate jelly.

A special alginate powder has been developed for making the jelly for freezing shrimp. The alginate jelly, it is claimed, protects the shrimp from drying and certain ingredients in the jelly weaken the effects of the enzyme that is the cause of the discoloration. The special jelly for shrimp is soluble in water, and is washed off when the shrimp are thawed.

The alginate freezing method has been adapted by an increasing number of plants in Norway, where it was developed, and the fish-processing companies of other European countries.

The new process is a block-freezing method and the liquid used is an aqueous thickened solution containing alginate, certain salts, and a dilute acid. The solution is so formulated that, after a certain time (which can be regulated), it becomes a firm jelly. The salts which are added give the jelly a freezing point between 4° and 5°C. (39-41°F.) The dispersal of the salt in the jelly remains constant during the freezing, and this prevents a concentration of salt on the surface of the frozen fish. By adjusting the concentration of acid it is possible to calculate the setting time of the jelly in advance. This is regulated so that a setting time between 10 and 20 minutes is obtained.

The principle of this method is that the fish or fillets are dipped in the solution and packed in rows in cartons. Since the solution is highly viscous, the packing material may be simple and cheap. As soon as the carton has been filled, more solution is added in order to seal all the spaces.

During the freezing, the jelly forms into a hard, icy composition which is practically impervious to air. When thawing it regains its jelly form at 4 to 5°C. While the fish is still frozen it can thus easily be taken out of the block and separated. The jelly between each fish acts as a separating medium; it does not bind the fish.

When treated as described, each fish is covered with a layer of jelly which, being practically impervious to air, protects against rancidity. Fish frozen in the jelly, in contrast to the usual frozen fish, retains its original shine to a high degree. The jelly does not easily dry up during storing. If drying should occur at a higher temperature, the jelly will form a film which again has a protective effect, although to a lesser extent.

In the first tests of the alginate jelly made in 1952, it was confirmed that the freezing time for herring in the jelly was reduced by up to 20-25 percent as compared with ordinary freezing methods.

It was stated by the test laboratory that after 5 and 6 months' storage untreated herring was just on the point of being unfit for human consumption, while the jelly-packed herring was almost fresh. The herring without alginate showed a tendency to discolor and had a distinctly rancid taste. The treated herring, on the other hand, were found to be of good quality. They were found to be completely satisfactory for bait purposes, having retained the essential shiny skin and showing no tendency to rancidity. (Norwegian Fishing News, Vol. V, No. 2.)

Pakistan

JAPANESE FISHING VESSELS
TO SURVEY BAY OF BENGAL
AND EAST PAKISTAN WATERS:

An official of Pakistan's Central Fisheries Department confirmed reports that a Japanese fishing vessel, under charter to the Japanese Government-sponsored Overseas Fishery Cooperative Organization, is scheduled to make a survey of

Pakistan (Contd.):

deep-sea fishing in the Bay of Bengal. The 196-ton Chosui Maru was due to arrive in Chittagong, East Pakistan, on November 28, 1958, where two Pakistani officials were to board the ship for a trip to Ceylon. Two Japanese fishing experts were scheduled to remain in East Pakistan to survey for shrimp resources with a trawler that accompanied the Chosui Maru.

Permission for a joint Pakistani-Japanese exploration of Pakistan fisheries had been sought in the past and been refused. Press reports indicated that with the help of the Japanese fishing experts, the undeveloped shrimp resources of East Pakistan could lead to increased export trade.

Peru

ANCHOVETA FISHING RESTRICTIONS EXTENDED:

The Peruvian Government announced that for reasons of conservation the previous 2-mile limit from the coast and various points within which anchoveta fishing is prohibited during daylight hours has been extended to 3 miles for the period December 1, 1958, to March 31, 1959. Additional regulations were issued to govern night fishing and fishing during the latter part of 1958. Anchoveta is a bait fish used in pole-and-line fishing for tuna. (United States Embassy, Lima, December 9, 1958.)

Portugal

CANNED FISH EXPORTS, JANUARY-SEPTEMBER 1958:

Portugal's exports of canned fish during January-September 1958 amounted to 43,410 metric tons (1,062,700 cases), valued at US$23.1 million, as compared with 36,424 tons, valued at US$22.2 million, for the same period in 1957. Sardines in olive oil exported during the first nine months of 1958 amounted to 29,609 tons, valued at US$15.7 million.

During January-September 1958, the leading canned fish buyer was Italy with 8,064 tons (valued at US$4.2 million), followed by Germany with 6,676 tons (valued at US$3.6 million), Great Britain with 4,803 tons (valued at US$2.5 million), the United States with 4,157 tons (valued at US$3.0 million), and Belgium-Luxembourg with 3,121 tons (valued at US$1.6 million). Exports to the United States included 1,871 tons of anchovies (Conservas de Peixe, November 1958.)

Portugese Canned Fish Exports, January-September 1958

Species	January-September 1958	
	Metric Tons	US$1,000
Sardines in olive oil	29,609	15,667
Sardinelike fish in olive oil	4,466	3,030
Sardine & sardinelike fish in brine	765	169
Tuna & tunalike fish in olive oil	1,551	1,232
Tuna & tunalike fish in brine	695	363
Mackerel in olive oil	5,515	2,432
Other fish	809	247
Total	43,410	23,140

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CANNED FISH PACK, JANUARY-JULY 1958:

The total pack of canned fish for January-July 1958 amounted to 17,849 metric tons as compared with 23,306 tons for the same period in 1957. Canned sardines in oil (9,164 tons) accounted for 51.3 percent of the January-July 1958 total pack, higher by 21.9 percent than the pack of 7,519 tons for the same period of 1957, the November Conservas de Peixe reports.

Portuguese Canned Fish Pack, January-July 1958

Product	Weight Net	Canners' Value
	Metric Tons	US$1,000
In Olive Oil:		
Sardines	9,164	5,116
Sardinelike fish	2,540	1,201
Anchovy fillets	1,981	1,692
Tuna	1,418	1,051
Other species (incl. shellfish)	270	186
In Brine:		
Sardinelike fish	2,043	367
Other species	433	146
Total	17,849	9,759

Note: Values converted at rate of 28.75 escudos equals US$1.

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EXPANSION OF CANNED FISH EXPORTS TO THE UNITED STATES DISCUSSED:

The first of a series of conferences sponsored by the Lisbon Commercial As-

Portugal (Contd.):

sociation for consideration of Portugal's export problems was devoted to canned fish exports. The principal speaker expressed concern with potential competition from Morocco following initiation of the European Common Market on January 1, 1959, and observed that Portugal should turn its attention to countries outside that market, specifically Poland, Czechoslavakia, Finland, Hungary, China, and the United States.

The speaker considered the United States to be the most promising single market for Portuguese canned fish. He noted that in 1957 the United States ranked fourth as a purchaser from Portugal, importing some 5,200 metric tons of canned fish. Of this amount, 2,670 metric tons or 140,000 cases were canned sardines, which, in view of the United States total consumption, suggested a potential for expansion of sardine exports.

The speaker recommended, and the conference agreed, that new packaging and aggressive advertising were essential for a deeper penetration of the United States market, especially in view of the foothold already gained by Norwegian competition. In order that foreign advertising campaigns might stress particular brand names, rather than promote Portuguese sardines generally, the speaker suggested that definite action be taken to reduce the present 1,150 brand names to manageable proportions.

The conference ended by recommending that a committee be appointed to study means of implementing the suggestions. (United States Embassy, Lisbon, December 11, 1958.)

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FISHERIES TRENDS, SEPTEMBER 1958:

Sardine Fishing: During September 1958, the Portuguese fishing fleet landed 20,723 metric tons of sardines (valued at US$1,757,565 ex-vessel or $85 a ton). In September 1957, a total of 13,093 tons of sardines was landed (valued at US$1,340,000).

Canneries purchased 62.5 percent or 12,956 tons of the sardines (valued at US$1,199,513 ex-vessel or $92.58 a ton) during September. Only 119 tons were salted, and the balance of 7,648 tons was purchased for the fresh fish market.

Matosinhos lead all other ports in September landings of sardines with 11,833 tons or 57.1 percent, followed by Setubal 3,510 tons (16.9 percent), and Lisbon 1,918 tons (9.3 percent).

Other Fishing: The September 1958 landings of fish other than sardines were principally 3,252 tons (value US$173,704) of chinchards, 1,205 tons (value US$79,339) of anchovies, 4,270 tons of mackerel (value US$260,417), 249 tons of tuna (value US$39,270), and 99 tons of bonito (value US$14,330). (Conservas de Peixe, November 1958.)

Somalia

TUNA FISHERY TRENDS:

Somalia reports good tuna fishing from her ports on the Gulf of Aden. Fishermen report seeing Japanese tuna long-liners fishing off the coast of Somalia in the Gulf of Aden and have heard unseen Japanese fishing boats talking over the radiotelephone. Three Japanese motherships were in Mombaso to refuel during the month. They were reported to have large catches aboard. The Japanese seem quite interested in the tuna industry in Somalia.

The plant manager of the fish cannery at Habo was in Italy during November to purchase new equipment. The cannery has been reopened after being closed for two years. Before leaving, the Habo cannery manager requested plans for a live-bait tank from personnel of the International Cooperation Administration. It is believed that live-bait tanks will contribute to increased tuna catches. The tuna cannery at Candala reported on October 26 that 1,400 cases (40 kilos or about 88 pounds to the case) of canned fish were ready for shipment.

Spain

REFRIGERATION CONFERENCE HELD IN MADRID:

The Experimental Refrigeration Center (Centro Experimental del Frio) in Madrid, Spain, held its Third Annual Meeting during February 23-28, 1959, in Madrid. All interested individuals or firms from all nations were invited to participate. Research papers and other works were presented for discussion.

During the course of the meeting, work sessions were alternated with various social events and two forums on subjects of future interest. The main topics covered were: (1) Production and Distribution of Refrigeration; (2) Application of Refrigeration to Perishable Products; (3) Permanent Cold-Storage Installations; (4) Portable Installations; (5) Industrial and Other Uses of Refrigeration; and (6) Teaching and Information on Refrigeration.

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VIGO FISHERIES TRENDS, SEPTEMBER-OCTOBER 1958:

Fish Exchange: Landings of fish at the Vigo Fish Exchange for the month of September dropped to 5,443 metric tons, a decrease of 126 tons from the previous month, and 1,857 tons less than in September 1957. Landings were valued at US$1,145,661 (at official rate of exchange, $1.00=42 pesetas), or about 20 percent below August due to lower landings of high-priced albacore. Leading species on the exchange were sardines (1,058 tons); horse mackerel (1,025 tons); albacore tuna (563 tons); and small hake (450 tons).

The unusually early appearance of anchovies in October raised landings at the exchange to the highest total for the year, 9,159 tons (valued at US$1,412,580), an increase of 1,127 tons and US$313,000 over October 1957. Leading species sold over the exchange in October were 3,210 tons of anchovies (October 1957 total 9 tons) followed by horse mackerel (1,061 tons), sardines (2,204 tons), small hake (464 tons), and needlefish (312 tons). Albacore catches dropped to 95 tons, signaling the end of the season, after a high of 2,660 tons in July. The albacore catch to the end of October totaled 4,820 tons almost a third more than the 3,639 tons caught in 1957.

Fish Canning and Processing: During September and October 1958 canners bought 4,092 tons of fresh fish for processing, a slight drop from the 4,237 tons purchased in July and August 1958. As is normal in late fall and throughout the winter, the principal species processed were sardines and anchovies. Anchovies, because of their great abundance this year, are being sold fresh instead of pickled; later in the year when fish stocks diminish, canners will pack anchovies cured in brine.

New Labor Regulations: The new labor regulations affecting the fish canning and fish processing industry (Official Bulletin of October 31, 1958) went into effect with minor changes. There were salary increases based on ingrade raises of 10 percent for the first five years of service and 5 percent for each subsequent 5-year period. Other changes include a slight increase in yearly bonuses, an administrative definition of temporary and permanent workers, and a regrouping of personnel.

Salary costs to the industry are expected to increase only slightly since salary increases do not cover all personnel, and are charged against base pay which represents approximately one half of the labor cost.

Problems and Government Aid: The head of the National Fisheries Syndicate, stated in a speech in September, that the main problems facing the Spanish fishing industry are the high cost of gas and oil, the extreme shortage of electronic equipment for fish-finding and navigation, and the shortage of manila and sisal line. He implied that the government should subsidize fuel prices, and allow fishermen more foreign exchange for the import of electronic gear. In addition, he commented on plans now being executed to install refrigeration equipment aboard tuna boats fishing in Dakar waters to preserve catches for at least two days, or long enough to reach Spanish facilities in the Canary Islands.

The Marine Social Institute reports that they will extend their retirement benefits to a small number of coastal fishermen (e.g., shore personnel and shellfish fishermen) not covered by previous regulations.

Union of South Africa

UNION OF SOUTH AFRICA AND SOUTH-WEST AFRICA PILCHARD-MAASBANKER INDUSTRY, AUGUST 1958:

In August 1958 the Union of South Africa Cape west coast catch was 26,706 metric tons pilchards, 800 tons maasbanker (jack mackerel), and 4 tons mackerel, according to the Union's Division of Fisheries. The month's total catch of 27,510 tons brought the total for the 1958 season to 298,854 tons (214,533 tons pilchards, 62,190 tons maasbanker, and 22,131 tons mackerel). The quota fish (pilchard-maasbanker) total for the season was 276,723 tons.

August 1958 landings compare with 7,612 tons pilchards and 749 tons maasbanker in August 1957, and 10,528 tons pilchards and 9,449 tons maasbanker in August 1956.

The August catch yielded 5,566 tons fish meal, 58,775 gallons fish oil, 792,653 pounds canned pilchards, and 275,828 pounds canned maasbanker.

Landings at Walvis Bay, South-West Africa, in August 1958 totaled 35,370 tons of pilchards, and the total catch for the season through August was 217,739 tons.

The Union's pilchard and maasbanker fishery ended in August, but in South-West Africa continued through October

Union of South Africa (Contd.):

1958 (South African Shipping News and Fishing Industry Review, October 1958).

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UNION AND SOUTH-WEST AFRICA FISH CATCH, 1958:

In the eight months of the 1958 season, the fishing boats of the Union of South Africa Cape west coast landed 214,533 metric tons pilchards, 62,190 tons maasbanker, and 22,131 tons mackerel. This fish was processed by 14 factories along some 200 miles of coast from Hout Bay to Thorn Bay.

The pilchard and maasbanker catch was (1) more than 26,000 tons above the normal quota, (2) 32,596 tons higher than the best catch since the quota was imposed in 1953, and (3) was second only to the record 1952 catch of 300,560 tons. The 22,131 tons of mackerel caught this year brought the pilchard-maasbanker-mackerel total to 298,854 tons--only 1,706 tons below the 1952 record.

In Walvis Bay, South-West Africa, the season was also one of good catches and the last of the six factories reached its quota and stopped operations in October 1958.

As Walvis Bay in 1952 processed 248,380 tons or about 2,000 tons less than the 1958 catch of just over 250,000 tons, the total pelagic shoal fish catch in 1958 must have just exceeded the 1952 total to establish a new record for the Union and South-West Africa.

This shoal fish catch may well push the total fish catch for the Union and South-West Africa to or even beyond the record 693,688 tons of 1952.

At the present rate of increase, the trawl fish catch (99,964 tons in 1957) in 1958 should reach and possibly exceed 100,000 tons for the first time. Thus shoal fish and trawl fish should alone bring the year's catch to 650,000 tons.

During the past 3 or 4 years snoek and other line-caught fish have averaged about 32,000 tons a year in the Union and about 4,000 tons in South-West Africa and may, therefore, bring the total to about 686,000 tons.

The spiny lobster catch for 1958 may be well below the estimated total in 1957 of about 15,000 tons, but it should be sufficient to take the 1958 fish catch to between 690,000 and 695,000 tons.

In an outstanding season, the Cape west coast pilchard catch showed the largest increase. Until 1958, the highest pilchard catch was the 187,424 tons landed in 1952. The 1958 catch of 214,533 tons exceeded that catch by a remarkable 27,109 tons.

During the 1958 season, factories on the Cape west coast produced 56,016 tons of fish meal, 2,938,978 gallons of fish body oil, 7,193,888 pounds of canned pilchards, 13,678,540 pounds of canned maasbanker, and 4,541,075 pounds of canned mackerel.

U. S. S. R.

FISHERY RESEARCH BY SUBMARINE:

A converted Russian submarine was scheduled to make a trip in December 1958 to make a scientific investigation of fish and the depths of the sea. Pravda, a Russian newspaper, quoted the head of the Soviet Fish Research Institute as saying that the world's first "oceanographic submarine would be equipped with giant searchlights, television cameras and equipment for taking and testing samples of the sea-bottom."

This research is a follow-up of the work done by Russian biologists in connection with Russia's International Geophysical Year Program. Oceanographic surveys in many areas of the world's oceans, particularly in the southern hemisphere, will be made by surface vessels together with submarines.

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FISHING INDUSTRY EXPANDS:

Although there are conflicting figures on Russia's fishery landings, it is quite

U. S. S. R. (Contd.):

evident that her fishing industry during the past decade has been expanding. Although the Food and Agriculture Organization reports Russia's fishery landings as 2,535,000 metric tons, other sources give the total for 1957 as 2,850,000 tons.

The latest available figure for canned fish production is for 1956--638 million cans.

At the present time there are 176 canneries and 206 refrigerating plants in the Soviet Union's fishing industry. These utilize 1,500 fish-pumping installations, 62 miles of conveyors, 500 mechanized lines for the processing of small fish, and 700 fish-dressing machines.

Russia's fishing industry now employs 9,000 engineers and 15,000 technicians. There are 5 higher educational institutes and 22 specialized secondary schools attached to the fishing industry, and between them they are training 22,490 specialists. Of this number, 7,000 are men and women already engaged in the industry who are taking evening or correspondence courses. (December 1958 World Fishing, British fishery periodical.)

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FREEZING INDUSTRY EXPANSION PLANNED:

In Soviet Russia over 400,000 metric tons of fish are frozen annually, according to an article which appeared in a recent issue of a Russian refrigeration periodical. Although food products other than fish are frozen, quick freezing has received widespread application only in the fishing industry, especially in recent years with the extensive freezing of fish aboard vessels.

Special stress is being laid in Russia on the necessity of developing the production of packaged quick-frozen products, particularly fruits, vegetables, and precooked foods. The objective of the freezing industry for 1959-1965 is to concentrate on intensive freezing methods with the use of air-blast tunnels and other quick-freezing equipment. It is planned to increase the production of quick freezers to about 1,000 units annually by 1965; also increase the output of mechanically-refrigerated low-temperature railway cars, refrigerated trucks, low-temperature display and sales cases, as well as domestic refrigerators with freezing compartments.

* * * * *

NORTH PACIFIC SALMON CATCH LOWER IN 1958:

Soviet Russia's North Pacific salmon catch in 1958 is believed to have dropped to less than 100,000 metric tons, far short of the 120,000-ton target, reports Nihon Keizai, Japan's leading economic daily newspaper.

"Under the circumstances, the Soviet Union will demand limiting Japan's catch next year to about 60,000 tons in the area covered by the Japan-Soviet agreement," reports the same newspaper. In 1958 the Japanese catch in the area was 110,000 metric tons.

United Kingdom

ADVANTAGES OF FREEZING FISH AT SEA STRESSED AT EXHIBITION:

The advantages of freezing fish at sea were stressed at the 1958 International Shipping and Commercial Fishing Exhibition at Kingston-upon-Hull, England. The two main problems that face the distant-water trawling industry are: supplying fresher fish and finding ways of reducing costs.

One of the most effective ways of reducing costs is to arrange for the trawler to spend a longer time on the fishing grounds. The limitations of the use of crushed ice as a preservative cut short the stay on the fishing grounds even though the hold is not full. A better method of preservation would allow the stay on grounds to be extended. With an improved method of preservation, the economic optimum speed of the trawler is lower, and the costs of machinery and fuel are very much less.

By using the latest machinery designs it is possible to reduce the space occupied by propulsion machinery and fuel and increase the space and capital available for processing plant and stowage of fish. In this way the voyage of a trawler of 185 to 190 feet can be extended by several days. The savings in costs, particularly in fuel and in the number of vessels required to land a given amount of fish in a year, are likely to be more than enough to cover the costs of freezing, storing, and thawing.

The capital cost for a freezing-fish-at-sea vessel is likely to be no higher than that of some recently-constructed motor trawlers. The Northern Wave freezing-fish-at-sea experiment in 1956 by the British demonstrated that whole headless sea-frozen cod were equal to very fresh iced fish and could be processed and handled in all the usual ways even after several months of storage. The fishermen had no difficulty in operating the plant at sea. The method was

United Kingdom (Contd.):

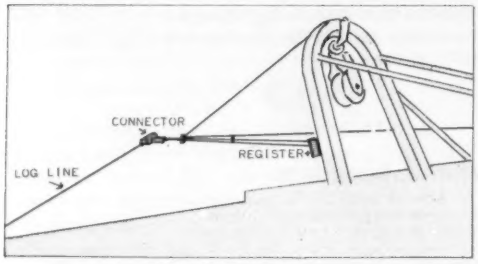
therefore proved in the technical sense, but economically speaking the advantages of extending the trip and of saving fuel could not be demonstrated because of the conditions of the experiment. In the economic analysis of the designs now put forward, the costs derived from the Northern Wave were used and it was assumed that thawed headless cod would sell at average prices equivalent to those of iced cod.

In trawlers of 185 and 190 feet it would still be necessary to stow a considerable proportion--up to two-thirds--of the fish at ice temperature, because there is still not sufficient space to freeze the whole of the catch. The frozen part of the catch would on the average represent the extension of stay on the fishing grounds as compared with the normal voyage, and the chilled fish would be equal to the normal catch. (Modern Refrigeration and Air Control, October 1958).

* * * * *

NEW TYPE LOG AND SPEED INDICATOR DEVELOPED FOR TRAWLERS:

A new type log and speed indicator has been designed and produced by a British firm primarily for the specialized conditions and demands of trawlers.



The instrument differs from the conventional log in that it is streamed from the ship's side, being boomed out 5 or 8 feet from the vessel, so that the rotator is in undisturbed water, level with the bridge, where it cannot foul propeller or gear during shooting or hauling the trawling gear. A small register, mounted on the inboard end of the boom (normally fitted to the gallows), transmits speed and distance readings with great accuracy to instruments located in the wheelhouse; a second distance reading is provided by a dial on the inboard end of the boom. The boom is fitted with a topping lift and forward guy, and is easily handled and streamed.

Two speed-range readings are provided, so that advantage can be taken of the instrument's sensitivity to record trawling speed on the 0-7 knot range, since the 0-14 knot range is used for steaming. It is claimed that the new instrument will indicate when the gear settles on the bottom, when it lifts, and when it is snagged. The distance repeater registers in tenths of a mile up to 1,000 miles, and provision is made to feed speed readings to the latest type radar units. On recent trials aboard the trawler Ross Leopard, the error over 260 miles was 0.5 miles.

The instrument operates from 110 or 220 volts, d.c. or a.c., or from a 6-volt battery. It costs £158 (about US$440), according to World Fishing, November 1958.

Yugoslavia

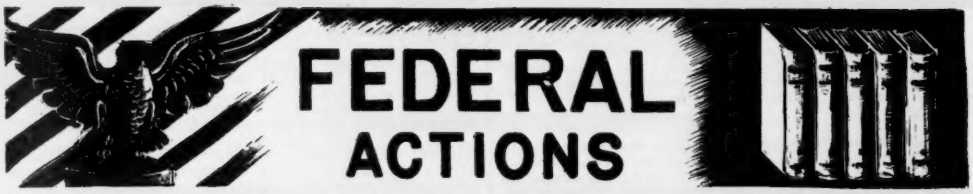
FISH CANNING INDUSTRY EXPANDS:

The Yugoslavian fish canning industry has progressed considerably during recent years. During 1957, landings of fish from Yugoslavian waters were as follows: 14,065 metric tons of small pelagic fish, 478 tons of tuna and bonito, and 3,921 tons of other species. These landings do not include trawler landings.

The most important species of small fish landed in Yugoslavia are sardines, anchovies, mackerel, and needlefish. Of the tunalike fish, tuna (Thunnus thynnus L.) is the most important, followed by bonito and albacore.

Of the total 1957 landings, 6,420 tons were canned, 2,910 tons salted, and 1,027 tons used in the manufacture of fish meal.

Yugoslavia has about 30 fish canneries. Most of their production is exported to Austria, United Kingdom, Germany, and the United States. (Industria Conservera, Vigo, Spain, August 1958.)



Department of Commerce

COAST AND GEODETIC SURVEY

WARNS AGAINST USING OBSOLETE CHARTS:

Collecting old charts can be a satisfying hobby, but the economy-minded skipper or pilot who tries to get a few more months' use from an out-of-date chart is only asking for trouble, the Director of the Coast and Geodetic Survey, U. S. Department of Commerce, pointed out on December 2, 1958.

The Director cautioned against such practices since constant changes in landmarks, aids to navigation, and submerged obstructions necessitate frequent revisions and corrections on modern charts which, unless applied, make the charts obsolete and hazardous to use.

The Coast and Geodetic Survey publishes 814 nautical charts covering the United States and its possessions. In an attempt to keep up with the constant changes, the Survey made more than 8 million hand corrections on its nautical charts last year. These corrections were made at the Survey's Washington office, the New York District Office, and the San Francisco District Office for distribution to the 441 sales agents throughout the country. When more than 40 hand corrections must be made on a chart, a new print is issued.

In the course of a year or even a few months, in some areas, revisions may involve complete changes in channels, buoys, and locations of wrecks. Resurveys of charted areas using modern instruments often reveal dangers that were previously undetected. One new edition along the Maine Coast involved over 120 changes, any one of which, if uncorrected, would constitute a navigation hazard.

One instance was revealed where a well-meaning skipper sent in a chart with penciled-in soundings indicated for a blank area on his chart. Investigation showed that the area had been surveyed and completely charted, but the skipper's chart turned out to be several years out of date.

The Director said, "This and similar cases point out the fact that, by nature, man develops an aversion to discarding old charts and regardless of the mode of transportation involved, these psuedo-treasures are tucked away in glove compartments, against bulkheads, and in cockpit compartments. The most that can be expected of using an old chart is that it will offer one reason why an accident happened."

To help to insure that only the latest charts are used, a list of the latest available prints of nautical charts has been prepared by the Coast and Geodetic Survey for publication in the weekly "Notice to Mariners" during January 1958.

A user of charts is advised to take stock of his charts, but wait until shortly before he is ready to leave before buying them, to assure the latest possible charts. The second suggestion is to consult the weekly "Notice to Mariners" for changes occurring, and keep your charts up to date. Information on changes in the local area may be found in the Local Notice to Mariners, published by the local Coast Guard District office.

For those who want to collect old charts the Coast and Geodetic Survey has on file a large number of original copperplate engravings of early editions of nautical charts, some of which date back to the 1850's. More than 70 different charts are available in prices ranging from $1.00 to $2.50.

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Federal Communications Commission

NEW LICENSING REGULATIONS FOR MARINE RADIOS:

New licensing regulations applicable to marine radios were issued recently by the Federal Communications Commission.

1. Beginning January 1, 1959, all transmitters of 2 to 3 Mc band class used in new installations must be Commission "type accepted" equipment.

2. Transmitters now licensed on boats are good until expiration date of the license. They may be relicensed to the same owner and same boat. Such relicense will be valid until 1963, when all sets must be "type accepted."

3. Interim licenses will not be issued for "non-type accepted" sets after January 1, 1959. It will be necessary to send your application direct to Washington.

4. The Commission requests that license applications on new installations for "non-type accepted" equipment not be filed after November 1, 1958, due to the time necessary to process applications.

Contact your marine radio supplier for advice if your radio license is up for renewal or if you are making a new installation.

Federal Trade Commission

CONSENT ORDERS PROHIBIT THREE SEAFOOD PACKERS AND BROKERS FROM MAKING ILLEGAL BROKERAGE PAYMENTS:

Three Seattle, Wash., canned seafood packers and primary brokers were requested to stop making illegal brokerage payments by Consent Orders (7035 Canned Seafood, 7089 Canned Seafood, and 7154 Seafood) approved by the Federal Trade Commission on November 8, 1958. All three were charged with violating Sec. 2(c) of the Robinson-Patman Amendment to the Clayton Act by giving

favored customers reduced prices reflecting brokerage, or rebates in lieu of brokerage.

Taking final action on each of these complaints, the Commission affirmed an order, in each case, by one of its hearing examiners which had been agreed to by the Commission's Bureau of Litigation and by each company and its officers.

Consent Order (7035 Canned Seafood): Requires a Seattle, Wash., firm packing canned salmon and other seafood and also acts as a primary broker for various packer principals to stop making brokerage payments which are forbidden by law.

For example, the complaint (made on January 14, 1958) alleged, on direct sales not involving field brokers, at least one favored buyer of the firm's own products was granted a 2-1/2 percent rebate (the customary brokerage fee) under the guise of a promotional allowance; and in sales of other packers' seafood, the firm charged customers less than the prices accounted for to the packer. The order forbids these practices in the future.

Consent Order (7089 Canned Seafood): Forbids a Seattle, Wash., packer and distributor of seafood to pay illegal brokerage to its customers.

In its complaint of March 20, 1958, the Commission charged that on direct sales not involving brokers, favored buyers were granted discounts or price reductions approximating the normal brokerage fee of 2-1/2 percent. In transactions handled through brokers, favored customers were given reductions offset by cutting the broker's commission, the complaint continued.

Consent Order (7154 Seafood): Requires a Seattle, Wash., primary broker of seafood to stop favoring customers with illegal brokerage payments.

The company was charged by the Commission on May 26, 1958, with granting certain buyers rebates in lieu of brokerage or price concessions reflecting brokerage. The firm either absorbed these rebates from its customary 5 percent brokerage fee, or shared them with the field broker involved out of the 2-1/2-percent commission each receives, the complaint alleged. Typical methods cited were selling at lower prices than those accounted for to packer-principals; granting price deductions wholly or partly not charged back to the packers; and taking reduced brokerage on sales involving price concessions. The order forbids these practices in the future.

The agreements, in each case, are for settlement purposes only and do not constitute an admission by the respondents that they have violated the law.

* * * * *

SEAFOOD PACKER AND BROKER ORDERED TO STOP MAKING ILLEGAL BROKERAGE PAYMENTS:

The Federal Trade Commission on December 22, 1958, approved a consent order (7210 Seafood) requiring a Hammond, Ore., seafood packer and its New York City broker, to stop making illegal brokerage payments.

The Commission adopted an initial decision by one of its hearing examiners containing an order agreed to by the companies and the Commission's Bureau of Litigation.

A Commission complaint, issued on July 23, 1958, charged the concerns with favoring certain buyers by (1) reducing net prices by approximately the brokerage commission; (2) giving them rebates or payments out of brokerage earnings for part of agreed-to-promotional allowances; and (3) agreeing to pass on a part of the brokerage in sharing price reductions granted these buyers in the form of promotional allowances. The complaint had alleged that these practices violate Sec. 2(c) of the Robinson-Patman Amendment to the Clayton Act.

In a second count, the complaint charged that the concerns paid a $50-per-month promotional allowance to a Pennsylvania customer and a $750 allowance to a customer in New Jersey. These allowances were not granted to competing customers on a proportionally equal basis as required by Sec. 2(d) of the law, the complaint maintained.

Joined in the order prohibiting these practices in the future are the officials of the companies involved. The agreement is for settlement purposes only and does not constitute an admission by the respondents that they have violated the law.

* * * * *

SEAFOOD PACKER AND ITS EXCLUSIVE BROKERS TECHNICALLY ADMIT ILLEGAL BROKERAGE PAYMENTS:

A Seattle seafood packer firm and its exclusive brokers stated that although illegal brokerage grants were technically illegal, they benefited "the buying or consuming public." This was the firm's reply to Federal Trade Commission charges of making illegal brokerage grants to some customers (Answer 7249 Canned Seafood).

Filing a joint answer to the Commission's complaint of September 11, 1958, were: the packer and its president and treasurer; and the brokerage firm and its president.

The complaint had charged them with granting favored buyers discounts or allowances in lieu of brokerage, in violation of Sec. 2(c) of the Robinson-Patman Amendment to the Clayton Act. Typical methods used by the firms, the complaint had charged, were: (1) granting buyers price reductions where either a primary or field broker, or both, were not used or, if used, took a reduction in their fee; and (2) selling at net prices lower than those accounted for to the packer-principal.

One of the brokerage firms has not been engaged in business since 1957 and was maintained since that date solely for tax purposes, the answer states, and it will be dissolved after January 1, 1959.

The brokers admit that in August 1956 they entered into a joint venture with the packer, becoming his exclusive broker, with certain direct sales excepted, and that in January 1957 the broker became the exclusive broker for the packer's whole pack under a new name. The answer denies, however, that the packer ever shared in any of the brokerage earnings under this joint venture, and maintains that the broker received full commissions on all sales.

Though admitting that prior to January 1, 1957, the packer had charged some direct buyers prices below those offered when brokers were utilized, and that the brokers made sales to certain buyers at prices below those accounted for to the packer, the answer declares these practices were discontinued as of that date.

According to the answer, the brokers, in order to better acquaint the public with the packer's brands, offered on equal terms to all customers in certain areas "promotional allowance" funds to be used "in the development of public recognition of Respondent broker's labels." These funds were granted out of brokerage earnings, and insofar as they amount to indirect price reductions or contributions benefiting the buyers, they were admittedly technical violations of the law.

Defending these arrangements, the answer declares they "have resulted in increasing the sales of their product in the areas mentioned, higher commissions for themselves and the field brokers, greater profits for their buyers, and the development of competition in these areas to the benefit of the buying or consuming public."

* * * * *

SHRIMP FIRM DENIES PAYING ILLEGAL BROKERAGE:

A New Orleans shrimp-producing and packing company has denied (Answer 7274 Shrimp) Federal Trade Commission charges of favoring direct buying customers with illegal brokerage payments, according to a December 8, 1958, Commission news release.

In answer to the Commission's complaint of October 8, 1958, the company admits that about 60 percent of its sales are made direct to certain of its customers without utilizing the services of its brokers. However, it flatly denies the Commission's charge that these direct purchases are granted allowances approximating the normal brokerage fee or price reductions reflecting this brokerage, in violation of Sec. 2(c) of the Robinson-Patman Amendment to the Clayton Act.

The company asked dismissal of the complaint.

General Services Administration

AGAR STOCKPILE TO BE SOLD IN 1959 AND 1960:

The General Services Administration plans to sell by competitive bidding about 198,173 pounds of agar now held in the national stockpile. Sales will be spaced at least six months apart and not more than 42 short tons (84,000 pounds) will be offered at any one time, according to the notice in the December 12, 1958, Federal Register. The agar will be available for sale beginning after June 12, 1959.

It is believed that this plan of sale will protect the United States against avoidable loss and will also protect producers, processors, and consumers against avoidable disruption of their usual markets.

The Office of Civil and Defense Mobilization has made a revised determination (pursuant to section 2(a) of the Strategic and Critical Materials Stock Piling Act) that there is no longer any need for stockpiling agar. This decision was due to the obsolescence of the stockpiled agar for use in time of war and was based upon the finding of the Office of Civil and Defense Mobilization that new and better forms of agar, within the meaning of section 3(e) (2) of the Act, have been developed for the same uses for which the agar was stockpiled. Also, that domestic capacity for the production of new and improved forms of agar is adequate to meet estimated mobilization needs.

Department of Health, Education, and Welfare

FOOD AND DRUG ADMINISTRATION

REGULATIONS ON FOOD ADDITIVES PROPOSED:

Regulations on food additives were proposed by the Food and Drug Administration on December 9, 1958, to carry out the requirements of the 1958 Food Additives Amendment to the Federal Food, Drug, and Cosmetic Act. The proposed regulations were published in the Federal Register of that date.

The proposed regulations cover definitions and interpretations; pesticide chemicals in processed foods; substances added to food which are not generally recognized safe; tolerance for related food additives; generally recognized safety factors to be considered; general principles for the evaluation of the safety of food additives; food additives for which new-drug applications are required; food additives proposed for use in foods for which definitions and standards of identity have been prescribed; procedural methods for new or untried additives; and other phases of administering the new law.

Included in the regulations is a list of 188 food chemicals which are believed by the Food and Drug Administration to be exempt from testing requirements of the law because they are generally recognized as safe for their intended use.

The list is only a partial compilation. There are 61 preservatives, 39 buffers and neutralizers (compounds affecting

acidity), 35 nutrients (vitamins, minerals, amino acids, etc.), 5 nonnutritive sweeteners, 5 coloring agents, 5 stabilizers, 4 emulsifiers, and 34 other additives. Thirty-six of the 188 are limited as to the quantity or the foods in which they may be used. Other food chemicals may be added if they meet the legal criteria for exemption; that is, if they are generally recognized by qualified experts as safe for their intended use. If a food additive does not fall in this category, it must be tested to establish its safety and cannot legally be used in food until this is permitted by a Food and Drug Administration regulation.

No flavoring materials are included in the list. These will be listed later. Nor are any coal-tar colors listed; these are subject to different provisions of the Federal Food, Drug and Cosmetic Act.

The proposed food additive regulations do not attempt to spell out in detail the type of scientific studies which must be made to determine the safety of a nonexempt additive. They state that the Administration will evaluate safety data on the basis of criteria established by the Food Protection Committee of the National Research Council unless equally good or better methods are proposed by the manufacturer.

Department of the Interior

FISH AND WILDLIFE SERVICE

U. S. GRADE STANDARDS FOR FROZEN HADDOCK FILLETS ISSUED:

Voluntary United States grade standards for frozen haddock fillets were announced in the December 18, 1958, Federal Register. The standards become effective March 1, 1959. These regulations are the first issued by the U. S. Department of the Interior prescribing grade standards for frozen haddock fillets.

The standards describe the product and grades, recommended weights and dimensions, quality factors, definitions and methods of analysis, and lot certification on tolerances, and also the grading score sheet.

On November 8, 1958, a notice of proposed rule making was published in the Federal Register on the intention of the Director of the Bureau of Commercial Fisheries to recommend to the Secretary of the Interior the adoption of United States standards for grades of frozen haddock fillets. Interested persons were given until November 20, 1958, to submit views or comments. After consideration of the views and comments submitted, minor modifications were made in the text of the regulations as proposed.

The grade standards as published in the Federal Register follow:

TITLE 50—WILDLIFE

Chapter I—Fish and Wildlife Service, Department of the Interior

Subchapter K—Processed Fishery Products, Processed Products Thereof, and Certain Other Processed Food Products

PART 174—UNITED STATES STANDARDS FOR GRADES OF FROZEN HADDOCK FILLETS [1]

On November 8, 1958, a notice of proposed rule making was published in the FEDERAL REGISTER (23 F. R. 8732) whereby notice was given of the intention of the Director of the Bureau of Commercial Fisheries to recommend to the Secretary of the Interior, the adoption of United States Standards for Grades of Frozen Haddock Fillets, set forth therein in tentative form, to be codified as Title 50, Code of Federal Regulations, Part 174. Interested persons were given until November 20, 1958, to submit views or comments concerning the proposal.

After consideration of all relevant matters presented, minor modifications in the text of the Standards for Grades of Frozen Haddock Fillets have been made in the interest of clarity. As so modified the standards set forth below, constituting a new Part 174, Title 50, are adopted pursuant to the authority contained in Title II, section 205, of the Agricultural Marketing Act of 1946, as amended (7 U. S. C. 1624) and shall become effective March 1, 1959.

Dated: December 12, 1958.

ROSS LEFFLER,
Acting Secretary of the Interior.

PRODUCT DESCRIPTION AND GRADES

Sec.
174.1 Product description.
174.2 Grades of frozen haddock fillets.

WEIGHTS AND DIMENSIONS

174.6 Recommended weights and dimensions.

FACTORS OF QUALITY

174.11 Ascertaining the grade.
174.12 Evaluation of the unscored factor of flavor and odor.
174.13 Ascertaining the rating for the factors which are scored; appearance, size, defects, and character.
174.14 Appearance.
174.15 Size.
174.16 Defects.
174.17 Character.

DEFINITIONS AND METHODS OF ANALYSIS

174.21 Definitions and methods of analysis.

LOT CERTIFICATION TOLERANCES

174.25 Tolerances for certification of officially drawn samples.

SCORE SHEET

174.31 Score sheet for frozen haddock fillets.

AUTHORITY: §§ 174.1 to 174.31 issued under sec. 205, 60 Stat. 1090, as amended, sec. 6, 70 Stat. 1122; 7 U. S. C. 1624, 16 U. S. C. 742e. Interpret or apply Bur. Budg. Order Mar. 22, 1958, 23 F. R. 2304.

PRODUCT DESCRIPTION AND GRADES

§ 174.1 *Product description.* The product described in this part consists of clean, whole, wholesome fillets or primarily large pieces of clean, whole, wholesome fillets, cut away from either side of haddock., Melanogrammus aeglefinus; the fillets may be either skinless or with skin on. They are packaged and frozen in accordance with good commercial practice and are maintained at temperatures necessary for the preservation of the product. (This part does not provide for the grading of pieces of fish flesh cut away from previously frozen fish blocks, slabs, or similar products.)

§ 174.2 *Grades of frozen haddock fillets.* (a) "U. S. Grade A" is the quality of frozen haddock fillets that possess a good flavor and odor; and for those factors which are rated in accordance with the scoring system outlined in this part have a total score of 85 to 100 points.

(b) "U. S. Grade B" is the quality of frozen haddock fillets that possess at least a reasonably good flavor and odor; and for those factors which are rated in accordance with the scoring system outlined in this part have a total score of not less than 70 points: *Provided,* That no factor receives maximum point score deduction.

(c) "Substandard" is the quality of frozen haddock fillets that fail to meet the requirements of U. S. Grade B.

[1] Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act.

WEIGHTS AND DIMENSIONS

§ 174.6 *Recommended weights and dimensions.* (a) The recommendations as to net weights and dimensions of packaged frozen haddock fillets are not incorporated in the grades of the finished product since net weights and dimensions, as such, are not factors of quality for the purpose of these grades.

(b) It is recommended that the net weights of the packaged frozen haddock fillets be not less than 12 ounces and not over 10 pounds.

FACTORS OF QUALITY

§ 174.11 *Ascertaining the grade.* The grade of frozen haddock fillets is ascertained by observing the product in the frozen and thawed states and after representative sample units have been cooked in a suitable manner. The following factors are evaluated in ascertaining the grade of the product: Flavor, odor, appearance, size, defects, and character.

(a) These factors are rated in the following manner:

(1) *Flavor and odor.* These factors are rated by organoleptic examination. Score points are not assessed (see § 174.12).

(2) *Appearance, size, defects, and character.* These factors are rated by score points expressed numerically on the scale of 100.

(b) The four factors and the maximum number of points that may be given each are as follows:

Factors:	Points
Appearance	25
Size	20
Defects	40
Character	15
Total score	100

§ 174.12 *Evaluation of the unscored factor of flavor and odor—(a) Good flavor and odor.* "Good flavor and odor" (essential requirement for a Grade A product) means that the fish flesh has good flavor and odor characteristic of haddock (Melanogrammus aeglefinus); and is free from staleness, and off-flavors and off-odors of any kind.

(b) *Reasonably good flavor and odor.* "Reasonably good flavor and odor" (minimum requirement of a Grade B product) means that the fish flesh may be somewhat lacking in good flavor and odor; and is free from objectionable off-flavors and off-odors of any kind.

§ 174.13 *Ascertaining the rating for the factors which are scored; appearance, size, defects, and character.* The essential variations within each factor which is scored are so described that the value may be ascertained for each factor and expressed numerically. Point deductions are allotted for each degree or amount of variation within each factor. The value for each factor is the maximum points allotted for the factor less the sum of the deduction-points within the factor.

§ 174.14 *Appearance.* (a) General: The factor of appearance refers to the color of the fish flesh, and to the degree of surface dehydration of the product.

(b) For the purpose of rating the factor of appearance the schedule of deduction-points in Tables I and II apply. Haddock fillets which receive 25 deduction-points for this factor shall not be graded above Substandard regardless of the total score for the product. This is a limiting rule.

TABLE I—SCORE DEDUCTIONS FOR COLOR SUBFACTOR

Color	Deduction points	
	"Light" colored portion comprising main portion of fillet	"Dark" colored portion occurring under skin mainly along lateral line
No discoloration	0	0
Slight yellowing	2	1
Moderate yellowing	4	2
Excessive yellowing and/or any rusting	13	12

TABLE II—SCORE DEDUCTIONS FOR DEHYDRATION SUBFACTOR

Degree of dehydration	Surface area affected (percent)		Deduction points
	Over—	Not over—	
Slight—Shallow and not color masking	0	1	0
	1	50	2
	50	100	5
Moderate—Deep but just deep enough to easily scrap off with fingernail	1	25	5
	25	50	8
	50	100	16
Excessive—Deep dehydration not easily scraped off	1	25	12
	25	100	25

§ 174.15 *Size.* (a) General: The factor of size refers to the degree of freedom from undesirably small fillet pieces. Any piece weighing less than 2 ounces is classed undesirably small.

(b) For the purpose of rating the factor of size the schedule of deduction-points in Table III apply. Haddock fillets which receive 20 deduction points for this factor shall not be graded above Substandard regardless of the total score for the product. This is a limiting rule.

TABLE III—SCORE DEDUCTIONS FOR SIZE OF FILLET PIECES

Number of fillet pieces less than 2 ounces per pound		Deduction points
Over—	Not over—	
	0	0
0	1	1
1	2	10
2	3	15
3	4	20

§ 174.16 *Defects.* (a) General: The factor of defects refers to the degree of freedom from improper packing, cutting and trimming imperfections, blemishes, and bones.

(1) *Improper packing.* "Improper packing" means poor arrangement of fillets, presence of voids, depressions, frost, and the imbedding of packaging material into fish flesh.

(2) *Cutting and trimming imperfections.* "Cutting and trimming imperfections" means that the fillets have ragged edges, tears, holes, or are otherwise improperly cut or trimmed.

(3) *Blemish.* "Blemish" means a piece of skin (except for skin-on fillets), scales, blood spot, a bruise, a black belly lining, a fin, or extraneous material. One "piece of skin" consists of one piece at least ¼ square inch in area; except that any skin patches larger than 1½ square inches are each considered as two pieces of skin. "Blood spot" is one of such size and prominence as to be considered objectionable. "Black belly lining" is any piece longer than ½-inch. Each aggregate area up to 1 square inch of identifiable fin or parts of any fin is considered as one "instance of fin". Each aggregate area up to 1 square inch per fillet of one scale or group of scales is considered one "instance of scales". "A bruise" consists of an affected area of ½ square inch or more in area; except that any bruise larger than 1½ square inches is considered as two bruises.

(4) *Bones.* "Bones" means any bones that can be identified, and are objectionable. One instance of bone means one bone or one group of bones occupying or contacting a circular area of 1 square inch.

(b) For the purpose of rating the factor of freedom from defects, the schedule of deduction-points in Table IV apply.

TABLE IV—SCORE DEDUCTIONS FOR DEFECTS

Defects subfactors	Method of determining subfactor score	Deduction points
Improper packing.	Moderate defects, noticeably affecting the products appearance.	2
	Excessive defects, seriously affecting products appearance.	4
Blemishes	Number of blemishes per 1 lb. of fish flesh:	
	Over 0 not over 1	1
	Over 1 not over 2	3
	Over 2 not over 3	5
	Over 3 not over 4	8
	Over 4 not over 5	16
	Over 5 not over 6	30
	Over 6	40
Bones	Number of instances per 1 lb. of fish flesh:	
	Over 0 not over 1	0
	Over 1 not over 2	5
	Over 2 not over 3	10
	Over 3 not over 4	15
	Over 4 not over 5	30
	Over 5	40
Cutting and trimming.	Slight defects, scarcely noticeable.	0
	Moderate defects, noticeable but not affecting the useability of any fillets.	4
	Excessive defects impairing:	
	(a) the useability of up to ¼ of the total number of fillets.	8
	(b) the useability of over ¼ but not more than ½ of the total number of fillets.	16
	(c) the useability of over ½ of the total number of fillets.	40

TABLE V—SCORE DEDUCTIONS FOR CHARACTER

Character subfactors	Method of determining subfactor score	Deduction points
Texture	Texture of the cooked fish:	
	(a) Firm, slightly resilient but not tough or rubbery; moist but not mushy.	0
	(b) Moderately firm; only slightly tough or rubbery; does not form a fibrous mass in the mouth; moist but not mushy.	4
	(c) Moderately tough or rubbery; has noticeable tendency to form a fibrous mass in the mouth; or is dry; or is mushy.	8
	(d) Excessively tough or rubbery; has marked tendency to form a fibrous mass in the mouth; or is very dry; or is very mushy.	15
Amount of drip.	Percent of drip:	
	Over 0 not over 5	0
	Over 5 not over 6	1
	Over 6 not over 8	2
	Over 8 not over 10	4
	Over 10 not over 12	6
	Over 12 not over 14	9
	Over 14 not over 16	12
	Over 16	15

§ 174.17 *Character.* (a) General: The factor of character refers to the amount of drip in the thawed fillets, and to the tenderness and moistness of the properly cooked fish flesh.

(b) For the purpose of rating the factor of character, the schedule of deduction-points in Table V apply. Haddock fillets which receive 15 deduction points for this factor shall not be graded above Substandard regardless of the total score for the product. This is a limiting rule.

DEFINITIONS AND METHODS OF ANALYSIS

§ 174.21 *Definitions and methods of analysis*—(a) *Percent of drip.* "Percent of drip" means the percent by weight of "free drip" (the fluid which is not reabsorbed by the fish tissue when the frozen fish thaws, and which separates freely without the aid of any external forces except gravity) in an individual package as determined by the following method:

(1) *Apparatus and materials.* (i) Water bath.

(ii) Balance, accurate to 0.1 gm; or 0.01 ounce.

(iii) Pliable and impermeable bag (cryovac, pliofilm, etc.).

(iv) Vacuum source (Vacuum pump or water aspirator).

(v) U. S. Standard No. 8 mesh circular sieve (both 8 and 12 inch diameters).

(vi) Stirring motor.

(vii) Identification tags.

(2) *Procedure.* (i) Weigh pliable and impermeable bag (cryovac, pliofilm, etc.).

(ii) Remove frozen material from container (container consists of the carton and the inner and outer wrappings).

(iii) Place frozen product, plus scraps of any material remaining on the container, into the pliable bag.

(iv) Weigh bag and contents and subtract tare to determine the net weight of the product.

(v) Evacuate air from bag by use of suction so that bag closely fits contour of product, with no air pockets.

(vi) Crimp the open end of bag and tie off (a secure and leakproof closure may be created by tying close to product and then folding excess bag and tying again).

(vii) Completely immerse bag and contents in a circulated water bath maintained at 68° F. plus or minus 2° F.

(viii) Allow to remain immersed until the product is defrosted (a "test run", in advance, is necessary to determine time required for each product and quantity of product).*

(ix) Remove bag and contents from bath and gently dry outside of bag.

(x) Weigh dry U. S. Standard No. 8 mesh circular sieve.

(xi) Open bag and empty contents onto U. S. Standard No. 8 circular sieve so as to distribute the product evenly, inclining the sieve slightly to facilitate drainage, and allowing to drain for two minutes.

(xii) Weigh sieve and its contents and calculate drained weight. The drained weight is the weight of sieve and fillets less the weight of the dry sieve.

(xiii) Calculate percent drip:

$$\frac{\text{Net weight (iv)} - \text{drained weight (xii)} \times (100)}{\text{Net weight}} = \text{Percent of drip}$$

(b) *Cooking in a suitable manner.* "Cooking in a suitable manner" shall mean that the product is cooked as follows: Place the thawed unseasoned product into a boilable film-type pouch. The pouch and its contents are then immersed in boiling water and cooked until the internal temperature of the fillets reaches 160° F. (about 20 minutes).

LOT CERTIFICATION TOLERANCES

§ 174.25 *Tolerances for certification of officially drawn samples.* The sample rate and grades of specific lots shall be certified in accordance with Part 170 of this chapter (regulations governing processed fishery products, 23 F. R. 5064, July 3, 1958).

SCORE SHEET

§ 174.31 *Score sheet for frozen haddock fillets.*

Label: .....
Size and kind of container: .....
Container mark or identification: .....
Size of lot: .....
Number of packages per master carton: .....
Size of sample: .....
Type of overwrap: .....
Actual net weight: .....(lb.) .....(kg.)

Factor	Score points	Sample score
Appearance	25	
Uniformity	20	
Defects	40	
Character	15	
Total	100	

Flavor and odor .....
Final grade .....

Note: Also see Commercial Fisheries Review, January 1958, p. 51, and November 1958, p. 54.

* * * * *

U. S. GRADE STANDARDS FOR FROZEN HALIBUT STEAKS PROPOSED:

Proposed voluntary United States grade standards for frozen halibut steaks were announced by the Director of the Bureau of Commercial Fisheries in the December 3, 1958, Federal Register. The Bureau proposes to recommend to the Secretary of the Interior the adoption of regulations for these standards. The regulations would become law under Title 50, Code of Federal Regulations, Part 175--United States Standards for Grades of Frozen Halibut Steaks.

These regulations, if made effective, will be the first issued by the Department of the Interior prescribing grade standards for frozen halibut steaks.

The proposed regulations for frozen halibut steaks would cover product description, style, grade, recommended dimensions, methods of ascertaining the grade, definitions and methods of analysis, tolerances for certification of officially-drawn samples, and the type of score sheet to be used. The notice of proposed rule making as it appeared in the Federal Register of December 3, 1958, follows:

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[50 CFR Part 175]

FROZEN HALIBUT STEAKS

U. S. STANDARDS FOR GRADES

Notice is hereby given, pursuant to section 4 (a) of the Administrative Procedure Act of June 11, 1946 (60 Stat. 238, 5 U. S. C. 1003), that the Director of the Bureau of Commercial Fisheries proposes to recommend to the Secretary of the Interior the adoption of the regulations set forth in tentative form below to establish grade standards for frozen halibut steaks. These regulations are to be codified as Title 50, Code of Federal Regulations, Part 175—United States Standards for Grades of Frozen Halibut Steaks, and are proposed for adoption in accordance with the authority contained in Title II of the Agricultural Marketing Act of August 14, 1946, as amended (7 U. S. C. 1621–1627). Functions under that Act pertaining to fish, shellfish, and any products thereof were transferred to the Department of the Interior by section 6 (a) of the Fish and Wildlife Act of August 8, 1956 (16 U. S. C. 742e). These regulations, if made effective, will be the first issued by the Department of the Interior prescribing grade standards for frozen halibut steaks.

Prior to the final adoption of the proposed regulations set forth below, consideration will be given to any written data, views, or arguments relating thereto which are received by the Director, Bureau of Commercial Fisheries,

Fish and Wildlife Service, Washington 25, D. C., on or before January 1, 1959.

Dated: November 28, 1958.

A. W. ANDERSON,
Acting Director,
Bureau of Commercial Fisheries.

PART 175—UNITED STATES STANDARDS FOR GRADES OF FROZEN HALIBUT STEAKS [1]

PRODUCT DESCRIPTION, STYLE, AND GRADES

Sec.
175.1 Product description.
175.2 Style of frozen halibut steaks.
175.3 Grades of frozen halibut steaks.

DIMENSIONS

175.6 Recommended dimensions.

FACTORS OF QUALITY AND GRADE

175.11 Ascertaining the grade.

DEFINITIONS AND METHODS OF ANALYSIS

Sec.
175.21 Definitions and methods of analysis.

LOT CERTIFICATION TOLERANCES

175.25 Tolerances for certification of officially drawn samples.

SCORE SHEET

175.31 Score sheet for frozen halibut steaks.

AUTHORITY: §§ 175.1 to 175.31 issued under sec. 205, 60 Stat. 1090, as amended; 7 U. S. C. 1624.

PRODUCT DESCRIPTION, STYLES, AND GRADES

§ 175.1 *Product description.* Frozen halibut steaks are clean, wholesome units of frozen raw fish flesh with normally associated skin and bone and are 2 ounces or more in weight. Each steak has two parallel surfaces and is derived from whole or subdivided halibut slices of uniform thickness which result from sawing or cutting perpendicularly to the axial length, or backbone, of a whole halibut. The steaks are prepared from either frozen or unfrozen halibut (Hippoglossus spp.) and are processed and frozen in accordance with good commercial practice and are maintained at temperatures necessary for the preservation of the product.

§ 175.2 *Styles of frozen halibut steaks.* (a) *Style I., random weight pack.* The individual steaks are of random weight and neither the weight nor the range of weights are specified.

(b) *Style II., uniform weight or portion pack.* All steaks in the package or in the lot are of a specified weight or range of weights.

§ 175.3 *Grades of frozen halibut steaks.* (a) "U. S. Grade A" is the quality of frozen halibut steaks which possess good flavor and odor, and that for those factors which are rated in accordance with the scoring system outlined in the following sections the total score is not less than 85 points.

(b) "U. S. Grade B" is the quality of frozen halibut steaks which possess at least reasonably good flavor and odor, and that for those factors which are rated in accordance with the scoring system outlined in the following sections the total score is not less than 70 points.

(c) "Substandard" is the quality of frozen halibut steaks which fail to meet the requirements of the "U. S. Grade B."

[1] Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug and Cosmetic Act.

DIMENSIONS

§ 175.6 *Recommended dimensions.* (a) The recommended dimensions of frozen halibut steaks are not incorporated in the grades of the finished product since dimensions, as such, are not factors of quality for the purpose of these grades. However, the degree of uniformity of thickness among units of the finished product is rated since it is a factor affecting the quality and utility of the product.

(b) It is recommended that the thickness (smallest dimension) of individually frozen halibut steaks be not less than ½ inch and not greater than 1¼ inches.

FACTORS OF QUALITY AND GRADE

§ 175.11 *Ascertaining the grade.* The grade is ascertained by observing the product in the frozen, thawed, and cooked states and is evaluated by consideration of the following:

(1) *Factors rated by score points.* The quality of the product with respect to scored factors is expressed numerically. Cumulative point deductions are assessed for variations of quality for each factor in accordance with the schedule in Table I, in the frozen, thawed, and cooked states. The total deduction is substracted from the maximum possible score of 100 to obtain the product score.

(2) *Factors not rated by score points.* The factors of flavor and odor are evaluated organoleptically in the cooked state for both the light and dark meat (surface fat) and are defined as follows:

(i) *Good flavor and odor.* "Good flavor and odor" (essential requirement for Grade A) means that the fish flesh has the good flavor and odor characteristics of halibut, and is free from rancidity and from off-flavors and off-odors.

(ii) *Reasonably good flavor and odor.* "Reasonably good flavor and odor" (minimum requirement for Grade B) means that the fish flesh may be somewhat lacking in the good flavor and odor characteristic of halibut, is reasonably free of rancidity, and is free from objectionable off-flavors and off-odors.

(iii) *Substandard flavor and odor.* "Substandard flavor and odor" (Substandard grade) means that the flavor

TABLE I—SCHEDULE OF POINT DEDUCTIONS FOR FACTORS RATED BY SCORE POINTS [1]

	Factor	Description of quality variation	Deduct
Frozen	1. Dehydration [2]	Per steak Surface area affected: Less than 1 square inch but obvious	1
		1 to 2 square inches	2
		Above 2 square inches	3
	2. Percentage glaze	Over 0.0, not over 6.0 percent by weight of sample unit	0
		Over 6.0, not over 7.0	1
		Over 7.0, not over 8.0	2
		Over 8.0, not over 9.0	3
		Over 9.0	4
	3. Uniformity of thickness	For each 1/16 inch above 1/4-inch variation in steak thickness (maximum total deduction permitted 6 points per sample unit).	2
	4. Uniformity of weight and minimum weight.	Style I—Random weight.—Use either (a) or (b), whichever gives a greater deduction.	
		(a) For each steak less than 3.0 ounces in weight per sample package.	4
		(b) For each 0.1 ounce below 4.0 ounces in average steak weight per sample.	½
		Style II—Uniform weight or portions.—For each full 1 percent of the steaks deviating by more than 0.6 ounce from the specified portion weight or the average of the specified portion range (per sample package).	2
Thawed	5. Workmanship—Defects of: Cutting, collar bone, loose skin, fins, blood spots, bruises, foreign material, backbone, cartilage, sawdust.	Slight or moderate	1
		Excessive (For each defect, per occurrence, per sample package or per 2 pounds for packages over 2 pounds net weight.)	2
	6. Color defects:	(Per sample unit)	
	(a) Discoloration of drip liquor	Slight	1
		Moderate	2
		Excessive	3
	(b) Discoloration of light meat [3]	(Per steak) Slight	1
		Moderate	2
		Excessive	3
	(c) Discoloration of dark meat [3]	(Per steak) Slight	1
		Moderate	2
		Excessive	3
	(d) Non-uniformity of color	(Per sample unit) Slight	1
		Moderate	2
		Excessive	3
	7. Honeycombing [3]	(Per steak) Surface area affected: 26 to 50 percent	½
		51 to 75 percent	1
		76 to 100 percent	2
Cooked	8. Texture defect [3] (tough, dry, fibrous, or watery).	(Per steak) Slight	1
		Moderate	2
		Excessive	3

[1] This schedule of point deductions in based on the examination of *sample units* composed of: (a) An entire sample package and its contents (for retail sized packages) or (b) a representative subsample consisting of three or more halibut steaks taken from each sample package (for institutional sized packages), except that the entire sample package shall be examined for factor 4.

[2] Point deductions for these factors are based on a 3 steak sample unit. For samples containing other than 3 steaks per sample unit or per package, multiply the results by the correction factor $\frac{3}{n}$ where n equals the number of steaks.

and odor fail to meet the requirements of "reasonably good flavor and odor."

(3) *Determination of final product grade.* The final product grade is derived on the basis of both the product score as determined by the "factors rated by score points" and the grade requirements of flavor and odor as defined under "factors not rated by score points." The lower of the two determines the final grade.

DEFINITIONS AND METHODS OF ANALYSIS

§ 175.21 *Definitions and methods of analysis.* (a) "Percentage glaze" on halibut steak means the percent by weight of frozen coating adhering to the steak surfaces and includes the frost within the package. It is determined by the method described below or by methods giving equivalent results.

(1) *Equipment needed.* (i) Source of cold tap water with aerated faucet.

(ii) Balance accurate to 0.1 gm.; or 0.01 ounce.

(iii) Paper towels.

(iv) Small knife.

(2) *Procedure.* (i) Weigh package in overwrap and all its contents (A).

(ii) Remove steaks and loose frost; weigh dry packaging (B).

(iii) The difference in weight, A–B represents weight of steaks plus glaze (C).

(iv) Remove glaze from halibut steaks.

(*a*) Adjust tap water to a flow rate of about 3 quarts/min. through an aerated faucet.

(*b*) Direct 50° to 60° F. tap water onto skin side of steak while gently feeling and rubbing cut surfaces with finger tips (if necessary, temperatures up to 80° F. may be used but require closer control).

(*c*) When all glaze is removed from cut flesh surface, as evidenced by absence of slick feel to fingers, remove steak from water.

(*d*) Rapidly remove excess water with single paper towel before it has time to refreeze on the steak, and flick off residual skin glaze by knife or hand.

(*e*) Repeat steps (b), (c), and (d) on each steak in package or sample unit.

(*f*) Weigh de-glazed halibut steaks (D, actual net weight of sample).

(Steps (*a*) through (*f*) of this subdivision are completed within three minutes.)

(v) Calculate percentage glaze: Percentage glaze $=\frac{C-D}{D}\times 100$.

(b) "Cooked state" means that the thawed product has been cooked in a suitable manner which is defined as being heated submerged in boiling water, unseasoned, and in a boilable film type pouch for ten minutes. (Steaks over one inch in thickness may require five additional minutes of heating.)

(c) Uniformity of thickness means that the thickness is substantially the same for one or more steaks within a package or sample unit.

(d) Color defects:

(1) "Discoloration of drip liquor" means that the free liquid which drains from the thawed steaks is discolored with blood residue usually from the dorsal aorta of the halibut.

(2) "Discoloration of light meat" means that the normal flesh color of the main part of the halibut steak has darkened due to deteriorative influences.

(3) "Discoloration of the dark meat" means that the normal color of the surface fat shows increasing degrees of yellowing due to oxidation.

(4) "Non-uniformity of color" refers to noticeable differences in color on a single steak or between adjacent steaks in the same package.

(e) "Dehydration" refers to the appearance of a whitish area on the surface of a steak due to the removal of water or drying of the affected area.

(f) "Honeycombing" refers to the visible appearance of numerous discrete holes or openings of varying size on the steak surface.

(g) "Workmanship defects" refers to appearance defects that were not eliminated during processing and are considered either objectionable or poor commercial practice.

(h) "Texture defect" refers to an undesirable increase in toughness and/or dryness, fibrousness, and watery nature of halibut examined in the cooked state.

LOT CERTIFICATION TOLERANCES

§ 175.25 *Tolerances for certification of officially drawn samples.* The sample rate and grades of specific lots shall be certified on the basis of Part 170 of this chapter (23 F. R. 5064).

SCORE SHEET

§ 175.31 *Score sheet for frozen halibut steaks.*

General

Label
Size and kind of container
Container mark or identification
Size of lot
Number of samples
Actual net weight (ounces)
Number of steaks per container
Product style

Scored factors (table 1)	Deductions
Frozen:	
1. Dehydration	
2. Percentage glaze	
3. Uniformity of thickness	
4. Uniformity of weight	
Thawed:	
5. Workmanship	
6. Color defects	
7. Honeycombing	
Cooked:	
8. Texture	
Total deductions	
Rating for scored factors (100—Total deductions)	
Unscored factors	**Rating**
Cooked:	
a. Odor	
b. Flavor (light meat)	
(dark meat)	
Flavor and odor rating	
Final grade	

Small Business Administration

REGULATIONS FOR SMALL BUSINESS INVESTMENT COMPANIES ISSUED:

Regulations on the establishment and operation of small business investment companies were published in the Federal Register of December 4, 1958, and became effective on that date. The investment companies will be chartered or licensed by the Small Business Administration (SBA) to operate under the Small Business Investment Act of 1958.

Notice of proposed regulations appeared in the October 29, 1958, Federal Register. The regulations as now issued carry the changes made necessary by the comments received from interested persons.

Private corporations will be chartered under state law or the Small Business Administration, to provide funds to small business firms through the purchase of convertible debenture bonds of such concerns and through the disbursement of long-term loans to such firms. The corporations will also be authorized to provide consulting and advisory services to small business firms on a fee basis for such services actually rendered. The program will be administered by SBA through its Small Business Investment Division.

The regulations include a statement of policy; statutory provisions; definitions; the establishment of the Small Business Investment Division; information, instructions, and forms; license application; prequisites for issuance of li-

cense; organization of small business investment companies; approving state-chartered companies for operations under the Act; conversion of investment and development companies; charter requirements; source of charter; organization of a licensee; fees for license and SBA charter; and many other details.

Eighty-Sixth Congress

(First Session)

Public bills and resolutions which may directly or indirectly affect the fisheries and allied industries are reported upon. Introduction, referral to committees, pertinent legislative actions, hearings, and other actions by the House and Senate, as well as signature into law or other final disposition are covered.

The First Session of the Eighty-Sixth Congress convened January 7, 1959.

BOAT SAFETY: H. R. 211 (Patman), a bill to promote boating safety on the navigable waters of the United States, its Territories, and the District of Columbia; to provide coordination and cooperation with the States in the interest of uniformity of boating laws; and for other purposes; to Committee on Merchant Marine and Fisheries; introduced in House January 7. Provides for a State system of issuing certificates for and the numbering of all undocumented vessels and probably would include undocumented fishing vessels unless specially exempted by future regulations issued under the Act if approved. Would be known as the Federal Boating Act of 1959.

FAIR LABOR STANDARDS AMENDMENTS OF 1959: H. R. 317 (Addonizio), a bill to amend the Fair Labor Standards Act of 1938, as amended, to provide coverage for employees of employers who are engaged in activities affecting interstate commerce, to eliminate certain exemptions, and for other purposes; to the Committee on Education and Labor; introduced in House January 7. Provides for the exemption of ". . .(4) any employee employed in the catching, taking, harvesting, cultivating, or farming of any kind of fish, shellfish, crustacea, sponges, seaweeds, or other aquatic forms of animal or vegetable life, including the going to and returning from work and loading and unloading when performed by such employee. . ." Also, provides that the Secretary of Labor appoint a special industry committee to recommend the minimum rates of wages to be paid under section 6 to employees in Puerto Rico or the Virgin Islands.

FEDERAL LOAN PROGRAMS: H. R. 797 (Hiestand), a bill to insure greater consistency among Federal loan programs, to avoid hidden subsidies, and to achieve more effective coordination between Federal loan programs and fiscal and credit policies of the Federal Government; to the Committee on Ways and Means; introduced in House January 7. Provides for uniform method of establishing interest rates on Government loans.

FISHERIES ASSISTANCE ACT: H. R. 181 (Lane), a bill to provide a 5-year program of assistance to enable depressed segments of the fishing industry in the United States to regain a favorable economic status, and for other purposes; to Committee on Merchant Marine and Fisheries; introduced in House January 7. The purpose of the proposed legislation, cited as the "Federal Fisheries Assistance Act of 1959," is to supplement the Fish and Wildlife Act of 1956 to provide assistance to any depressed segment of the fishing industry found to be threatened with or suffering from injury occasioned by a trade-agreement concession from which "escape clause" relief, as authorized by section 7 (c) of the Trade Agreements Extension Act of 1951, as amended has been or hereafter may be withheld because of consideration affecting the Nation's security or because of other overriding considerations in the national interest. Direct assistance in the form of loans, grants-in-aid and incentive payments are authorized and designed to aid the industry so affected to improve its methods of catching, handling, and preserving and processing fish and to improve the quality of its products and thus attain and maintain a better competitive position with relation to foreign-produced fishery products of like character through the repair, alteration, improvement, modernization, replacement, and construction of fishing vessels and gear, fish preservation equipment, processing plants, and other equipment and facilities used in catching, handling, processing, packaging, and marketing of domestically-produced fish and fishery products derived from the species upon which the adversely-affected industry is dependent. Additional purposes of this Act further provide assistance in the reconditioning, equipping and outfitting of existing fishing vessels and the construction, equipping, and outfitting of new fishing vessels; to promote higher standards of safety; and through the provision of an inspection and grading service to improve and standardize the quality of domestically-produced fishery products.

Specifically the bill provides, under such terms and conditions as may be prescribed, for (1) payment of a construction-differential subsidy to fishing vessel owners to aid in the construction of new fishing vessels as replacement for a lost, inefficient, worn-out, or obsolete fishing vessel; (2) extending of loans for financing and refinancing the purchase and repair of plant machinery, equipment, and facilities, and for the general reconditioning and modernization of fish-processing plants for which a revolving loan fund is to be created and for which an authorized sum of $6,000,000 is to be appropriated to provide the initial capital; (3) incentive payments are authorized to be paid to any fishing vessel owners who shall observe or cause to be observed practices prescribed for improving methods of handling fish and maintaining the quality thereof from time of capture to delivery at the

dock at a rate not to exceed 1 cent per pound to be added to the ex-vessel price payable for the fish; (4) incentive payments are also authorized to be paid to any processing plant owner, not to exceed one-third cent per pound of fish (ex-vessel weight), to promote and encourage greater operating efficiency in the handling and processing of fishery products derived from domestically-produced fish of the species covered by this Act from the point of landing of the raw product on the dock and throughout all phases of processing and packaging until ready for marketing; (5) services in the establishment and maintenance of a system for currently recording all insurance claims and recoveries thereon originating in such areas and covering loss of, damage to, or occasioned by fishing vessels, the machinery, equipment, and facilities on such vessels, together with insurance claims and recoveries thereon for personal injury and death resulting from or incident to employment on fishing vessels in such areas; (6) as an aid to assuring the maintenance of a uniformly high standard of quality for fishery products, certain provisions exist whereby inspecting and grading of fishery products processed in fish-processing plants as defined in the Act may be provided without charge; (7) also the Interior Secretary is authorized to contract for or to design, develop, construct, and operate, or to make available to individuals or firms, with or without reimbursement, equipment suitable for handling fish from fishing vessels. Also S. 21 (Mrs. Smith), to Committee on Interstate and Foreign Commerce, introduced in Senate January 9.

H. R. 390 (MacDonald), a bill to provide a 5-year program of assistance to enable depressed segments of the fishing industry in the United States to regain a favorable economic status, and for other purposes; to the Committee on Merchant Marine and Fisheries; introduced in House January 7. This bill is somewhat more limited than H. R. 181 since it only (1) provides for 33⅓ percent construction and reconstruction-differential subsidies for fishing vessels and $5,000,000 to finance them and (2) loans to processors of fishery products in distressed segments of the fishing industry for which another $5,000,000 would be provided for making the loans.

FISHERMEN'S COOPERATIVE ASSOCIATIONS BANK: H. R. 180 (Lane), a bill to provide credit facilities for the use of fishermen's cooperative associations through establishment of a Bank for Fishermen's Cooperative Associations, and for other purposes; to Committee on Merchant Marine and Fisheries; introduced in House January 7. Bill points out that continued prosperity of fishermen's cooperatives depend on their ability to secure credit at reasonable interest rates for the purpose of stabilizing the currents of interstate and foreign commerce in the marketing of fishery products. Bill authorizes the Secretary of the Interior to organize and charter a corporation to be known as the "Bank for Fishermen's Cooperative Associations." The capital stock of the bank shall be in such amount as the Secretary of the Interior determines is required for the purpose of meeting the credit needs of eligible borrowers from the bank. There is authorized to be appropriated the sum of $10,000,000 as a revolving fund. The bank is authorized to make loans out of the revolving fund to fishermen's cooperative associations (1) to finance fish and shellfish or products thereof stored in cold storage or other storage facilities owned, leased, or used by such fishermen's cooperative associations: Provided, That the bank is given a first lien on all inventories thus stored by said cooperative associations; (2) to provide operating capital required to supplement the capital funds of fishermen's cooperative associations; (3) to finance or refinance the acquisition of land, buildings, and equipment used by fishermen's cooperative associations in connection with activities related to the processing, preparing for market, handling or marketing of fish and shellfish; the purchasing, testing, grading, processing, distributing or furnishing of fishing gear, fuel, ice, and other supplies required in connection with the production, processing, and distribution of fish and shellfish; and the furnishing of business services related to such activities; (4) to finance and refinance the operations, maintenance, replacement, repair, and equipment of fishing gear and vessels: Provided, That the fishermen's cooperative association requesting a loan for such purposes has been engaged in fish production for a period of not less than one year prior to the date of the loan applications: Provided further, That financial assistance for such purposes has not been extended to the applicant under section 4 of the Fish and Wildlife Act of 1956 (70 Stat. 1121) and is not otherwise available on reasonable terms. Also to borrow from, and discount or rediscount paper with other Federal banks and commercial banks. Bill also describes stock subscriptions of borrowers, voting rights of stockowners, and rise of earnings and reserves.

FISHERIES COOPERATIVE MARKETING ACT: S. 23 (Mrs. Smith), a bill to amend the Fisheries Cooperative Marketing Act; to the Committee on Interstate and Foreign Commerce; introduced in Senate January 9. Exempts fisheries cooperatives from antitrust acts or regulations.

FISH HATCHERIES: H. R. 2398 (Gavin), a bill to provide for the establishment of a fish hatchery in the northwestern part of the State of Pennsylvania; to the Committee on Merchant Marine and Fisheries; introduced in the House January 15.

FISHING VESSEL CONSTRUCTION SUBSIDY: H. R. 2181 (King of California), a bill to amend Title V of the Merchant Marine Act, 1936, as amended, to promote the maintenance of the American fishing fleet under competitive conditions and in the interest of sustained fish food supplies in case of emergency and for other purposes; to the Committee on Ways and Means; introduced in House January 12. Provides for the payment of a construction-differential subsidy for new fishing vessels.

FOREIGN COMMERCE IMPORT QUOTA RESTRICTIONS: H. R. 1207 (Bailey), a bill to regulate the foreign commerce of the United States by establishing import quotas under specified conditions, and for other purposes; to the Committee on Ways and Means; introduced in House January 7.

HAWAII STATEHOOD: H. R. 50 (Burns of Hawaii), a bill to provide for the admission of the State of Hawaii into the Union; introduced in House January 7.

Also H. R. 324 (Barrett), H. R. 801 (Holland), H. R. 954 (Saylor), H. R. 959 (Sisk), H. R. 1106 (Berry); all introduced in House January 7. Also H. R. 1800 (Dent), H. R. 1833 (Libonati), H. R. 1917 (Mrs. Green of Oregon), H. R. 1918 (Holt), H. R. 2004 (Younger) introduced in House January 9. Also H. R. 2328 (Dooley), H. R. 2348 (McCormack), and H. R. 2476, introduced in House January 15. Also S. 50 (Murray and 52 other Senators) introduced in Senate January 9. All similar to H. R. 50. House bills to Committee on Interior and Insular Affairs and Senate bill to Committee on Interior and Insular Affairs.

IMPORTS OF POLLUTED SHELLFISH PROHIBITED: H. R. 1244 (Colmer), a bill to prohibit the importation into the United States of polluted shellfish; to the Committee on Ways and Means; introduced in House January 7.

INCOME TAX LAW REVISION IN FAVOR OF FISHERMEN: H. R. 604 (Pelly), a bill to extend to fishermen the same treatment afforded farmers in relation to estimated income tax; introduced in House January 7. Also H. R. 1925 (King of Calif.) introduced in House January 1, similar to H. R. 604. Both to Committee on Ways and Means.

LOBSTER INTERSTATE TRANSPORTATION: S. 22 (Mrs. Smith), a bill to regulate the interstate transportation of lobsters; to the Committee on Interstate and Foreign Commerce; introduced in Senate January 9.

MARINE LABORATORY IN FLORIDA: H. R. 350 (Cramer), a bill to provide for the construction of a fish and wildlife marine laboratory and experiment station in the central Gulf coast area of Florida; to Committee on Merchant Marine and Fisheries; introduced in House January 7.

MARKETING FACILITIES IMPROVEMENT: S. 292 (Humphrey), a bill to encourage the improvement and development of marketing facilities for handling perishable agricultural commodities; to the Committee on Agriculture and Forestry; introduced in the Senate January 14. H. R. 1807 (Ford), introduced in the House on January 9, to the Committee on Agriculture, similar to S. 292. Seafood is among the "agricultural commodities" spelled out in the bills.

PACIFIC MARINE FISHERIES COMMISSION: January 7 transmitted to the House 10th Annual Report for the year 1957; to Committee on Merchant Marine and Fisheries.

January 9--A letter from the Chairman, Pacific Marine Fisheries Commission, Portland, Ore., transmitting, pursuant to law, a report of that Commission for the year 1957 (with an accompanying report); to the Senate Committee on Interstate and Foreign Commerce.

PRICE DISCRIMINATION: H. R. 11 (Patman), a bill to reaffirm the national policy and purpose of Congress in the laws against unlawful restraints and monopolies, commonly designated "antitrust" laws, which among other things prohibit price discrimination; to aid in intelligent, fair, and effective administration and enforcement thereof; and to strengthen the Robinson-Patman Anti-Price Discrimination Act and the protection which it affords to independent business, the Congress hereby reaffirms that the purpose of the antitrust laws in prohibiting price discriminations is to secure equality of opportunity to all persons to compete in trade or business and to preserve competition where it exists, to restore it where it is destroyed, and to permit it to spring up in new fields; to Committee on the Judiciary; introduced in House January 7. Supplements existing laws against unlawful restraints and monopolies. Provides that refuting evidence of price discrimination rests with person charged unless lower price was made to meet competition.

Also H. R. 384 (Lesinski), H. R. 927 and 929 (Rogers of Colorado), H. R. 1205 (Zaboliocki), to the Committee on the Judiciary; all introduced in House January 7. Also S. 315 (Kennedy), to Committee on the Judiciary, introduced in Senate January 14; H. R. 2463 (Boykin), to Committee on Interestate and Foreign Commerce, introduced in House January 15. All similar to H. R. 11 (Patman).

PRICE STABILITY: H. R. 17 (Bennett of Florida), a bill to amend the Employment Act of 1946 to make relative stability of prices an explicit aim of Federal economic policy; to Committee on Government Operations; introduced in House January 7. Also S. 64 (Bush and 4 other Senators), to Committee on Banking and Currency, introduced in Senate January 9, and similar to H. R. 17.

PRICE STABILIZATION: H. R. 2463 (Boykin), a bill to amend the Federal Trade Commission Act to promote quality- and price-stabilization; to the Committee on Interstate and Foreign Commerce; introduced in the House January 15.

SALMON IMPORT RESTRICTIONS: H. R. 605 (Pelly), a bill to facilitate the application and operation of the Fish and Wildlife Act of 1956, and for other purposes; also H. R. 1308 (Magnuson); to the Committee on Merchant Marine and Fisheries; both introduced in House January 7. Would prohibit the import of salmon products derived from fish caught by nationals of any country that permits fishing for salmon by gill nets on the high seas at times and places where occur large quantities of immature salmon of North American origin.

SHRIMP IMPORT DUTIES: H. R. 483 (Colmer), a bill to provide for an ad valorem duty on the importation of shrimp; to Committee on Ways and Means; introduced in House January 7. A duty of 35 percent ad valorem would be imposed on imports of fresh, frozen, prepared, canned, or preserved shrimp, shrimp tails, and shrimp meat.

SMALL BUSINESS LOANS IN ECONOMIC DISASTER AREAS: H. R. 87 (Coffin), a bill to amend the Small Business Act of 1958 to authorize loans by the Small Business Administration in areas of economic disaster, depression, or dislocation; to Committee on Banking and Currency; introduced in House January 7.

SMALL BUSINESS TAX RELIEF: H. R. 2 (Ikard), H. R. 473 (Brown of Missouri), and H. R. 1270 (Laird), provide a minimum initial program of

tax relief for small business and for persons engaged in small business; to the Committee on Ways and Means; introduced in House January 7. Also S. 59 (Sparkman and 2 other Senators) introduced in Senate January 9; to Committee on Finance.

STARFISH ERADICATION IN LONG ISLAND SOUND: H. R. 1984 (Wainwright), a bill to provide that the Secretary of the Interior shall develop and carry out an emergency program for the eradication of starfish in Long Island Sound and adjacent waters; to the Committee on Merchant Marine and Fisheries, introduced in House January 9.

STEELHEAD TROUT INTERSTATE TRANSPORTATION REGULATION: S. 213 (Magnuson), a bill to regulate the interstate transportation of steelhead trout; to the Committee on Interstate and Foreign Commerce; introduced in Senate January 12. The bill provides that it shall be unlawful (1) to deliver, receive for transportation, or transport by any means from any state to or through any other state any steelhead trout (Salmo gairdneri), if the laws of the state to which such steelhead trout is or is to be transported do not permit the taking of such steelhead trout within such state for commercial purposes; (2) to present or receive any such steelhead trout which has been transported in violation of the provisions of this Act; (3) to make any false record or render a false account of the contents of such shipment; (4) not to mark any package or container containing steelhead trout transported or delivered for transportation in interstate commerce on the outside with the name "Steelhead Trout" and the names and addresses of the shipper and consignee.

STOCKPILING OF ESSENTIAL FOODSTUFFS AGAINST NATIONAL EMERGENCIES: H. R. 2545 (Hull), a bill to provide for the stockpiling, storage, and distribution of essential foodstuffs and other essential items for the sustenance of the civilian population of the United States, its Territories, possessions, and the District of Columbia in the event of enemy attack or other disaster; to the Committee on Armed Services; introduced in House January 15.

TRADE AGREEMENT ACT EXTENSION: H. R. 670 (Thomson of Wyoming), a bill to extend the authority of the President to enter into trade agreements under section 350 of the Tariff Act of 1930, and for other purposes; to the Committee on Ways and Means; introduced in House January 7.

TUNA IMPORT REGULATION: H. R. 443 (Utt), a bill to regulate the importation of tuna; also H. R. 673 (Thomson of Wyoming); H. R. 682 (Wilson); H. R. 683 (Wilson); to Committee on Ways and Means; all introduced in House January 7.

TUNA INDUSTRY STABILIZATION: H. R. 442 (Utt), a bill to stabilize the tuna fishing industry; also H. R. 447 (Wilson); to the Committee on Merchant Marine and Fisheries; both introduced in House January 7 and similar to H. R. 442.

UNEMPLOYMENT RELIEF IN DEPRESSED AREAS: H. R. 71 (Celler), a bill to establish an effective program to alleviate conditions of excessive unemployment in certain economically depressed areas. Also H. R. 95 (Farbstein) and H. R. 407 (Perkins); to the Committee on Ways and Means.

Also H. R. 111 (Mrs. Kee), H. R. 1001 (Denton), H. R. 1034 (Multer), H. R. 1072 (Vanik), H. R. 1249 (Gray), H. R. 1322 (Price), H. R. 1377 (Walter), H. R. 1770 (Ashley); all introduced in House January 7; all to Committee on Banking and Currency.

Also S. 268 (Scott), to Committee on Banking and Currency, introduced in Senate January 14. Also H. R. 2394 (Dollinger), introduced in House January 15, to Committee on Ways and Means. All similar to H. R. 71.

WAGES: H. R. 83 (Celler), a bill to amend the Fair Labor Standards Act of 1938 so as to increase the minimum hourly wage from $1 to $1.25; also H. R. 386 (Lesinski), H. R. 253 (Rooney), H. R. 188 (Lane), H. R. 429 (Roosevelt), H. R. 450 (Zelenko), H. R. 777 (Green) of Pennsylvania), H. R. 853 (Multer), H. R. 955 (Shelley), H. R. 1198 (Wier); all to Committee on Education and Labor and introduced in House January 7.

Also H. R. 1906 (Dollinger), introduced in House January 9; also H. R. 2205 (O'Hara of Illinois) introduced in House January 12.

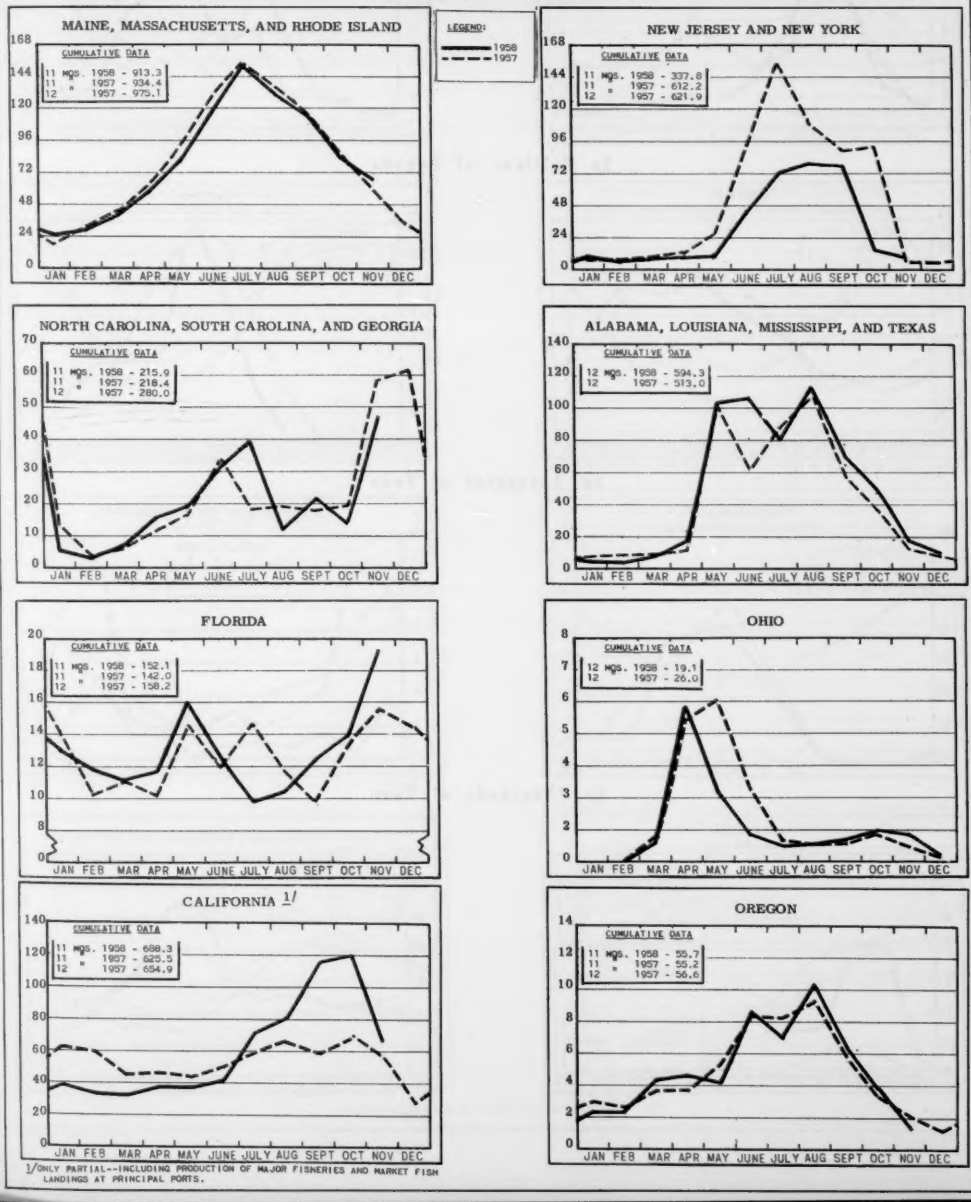
Also H. R. 2435 (Libonati), introduced in House January 15. All similar to H. R. 83 and to Committee on Education and Labor.

WATER CONSERVATION ACT OF 1959: H. R. 8 (Trimble), a bill to promote and establish policy and procedure for the development of water resources of lakes, rivers, and streams; to the Committee on Public Works; introduced in the House January 7. Among other things provides that the development of water resources by the United States shall be based upon adequate and reliable data and shall be so planned and prosecuted on a comprehensive multiple-purpose basis to achieve maximum sustained usefulness of resources for all beneficial purposes; to protect and promote commerce among the several States, and the general welfare, security, and defense of the United States, and for other purposes.

WEATHER STATION IN GULF: H. R. 481 (Colmer), a bill to provide that one floating ocean station shall be maintained at all times in the Gulf of Mexico to provide storm warnings for States bordering on the Gulf of Mexico; to the Committee on Merchant Marine and Fisheries; introduced in House January 7.

CHART 1 - FISHERY LANDINGS for SELECTED STATES

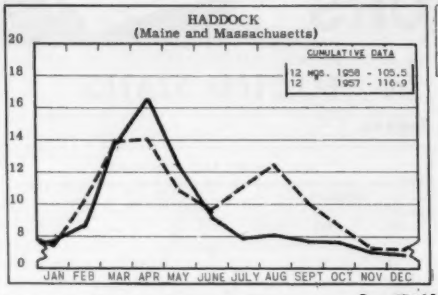
In Millions of Pounds

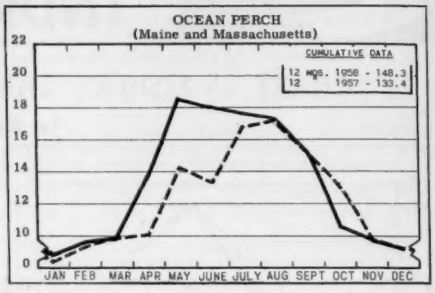

MAINE, MASSACHUSETTS, AND RHODE ISLAND
CUMULATIVE DATA
11 MOS. 1958 - 913.3
11 " 1957 - 934.4
12 " 1957 - 975.1
LEGEND:
1958
1957
NEW JERSEY AND NEW YORK
CUMULATIVE DATA
11 MOS. 1958 - 337.8
11 " 1957 - 612.2
12 " 1957 - 621.9
NORTH CAROLINA, SOUTH CAROLINA, AND GEORGIA
CUMULATIVE DATA
11 MOS. 1958 - 215.9
11 " 1957 - 218.4
12 " 1957 - 280.0
ALABAMA, LOUISIANA, MISSISSIPPI, AND TEXAS
CUMULATIVE DATA
12 MOS. 1958 - 594.3
12 " 1957 - 513.0
FLORIDA
CUMULATIVE DATA
11 MOS. 1958 - 152.1
11 " 1957 - 142.0
12 " 1957 - 158.2
OHIO
CUMULATIVE DATA
12 MOS. 1958 - 19.1
12 " 1957 - 26.0
CALIFORNIA 1/
CUMULATIVE DATA
11 MOS. 1958 - 688.3
11 " 1957 - 625.5
12 " 1957 - 654.9
OREGON
CUMULATIVE DATA
11 MOS. 1958 - 55.7
11 " 1957 - 55.2
12 " 1957 - 56.6
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

1/ONLY PARTIAL--INCLUDING PRODUCTION OF MAJOR FISHERIES AND MARKET FISH LANDINGS AT PRINCIPAL PORTS.

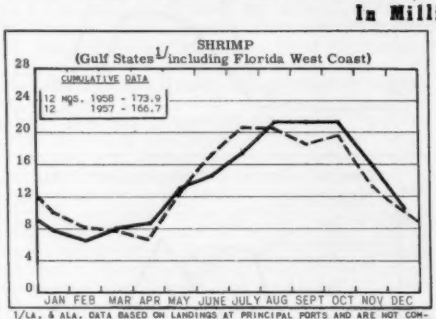
CHART 2 - LANDINGS for SELECTED FISHERIES

In Millions of Pounds

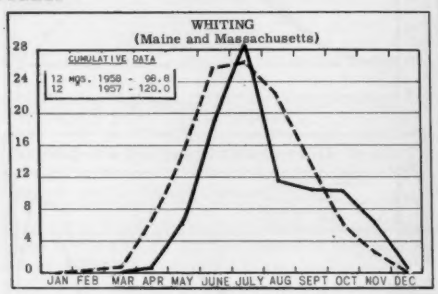



OCEAN PERCH
(Maine and Massachusetts)
CUMULATIVE DATA
12 MOS. 1958 - 148.3
12 " 1957 - 133.4
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

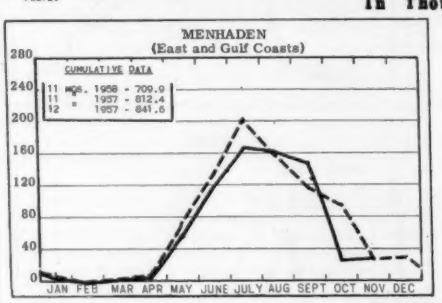
In Millions of Pounds

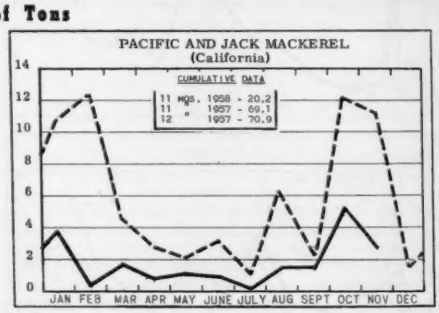

SHRIMP
(Gulf States 1/ including Florida West Coast)
CUMULATIVE DATA
12 MOS. 1958 - 173.9
12 " 1957 - 166.7
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

1/ LA. & ALA. DATA BASED ON LANDINGS AT PRINCIPAL PORTS AND ARE NOT COMPLETE.

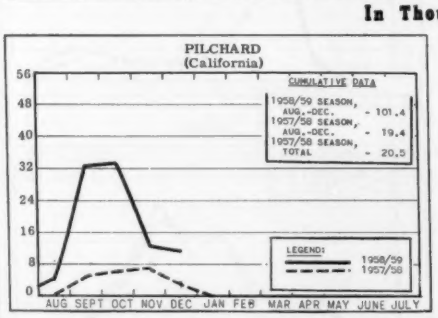

WHITING
(Maine and Massachusetts)
CUMULATIVE DATA
12 MOS. 1958 - 98.8
12 " 1957 - 120.0
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

In Thousands of Tons


MENHADEN
(East and Gulf Coasts)
CUMULATIVE DATA
11 MOS. 1958 - 709.9
11 " 1957 - 812.4
12 " 1957 - 841.6
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC


PACIFIC AND JACK MACKEREL
(California)
CUMULATIVE DATA
11 MOS. 1958 - 20.2
11 " 1957 - 69.1
12 " 1957 - 70.9
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

In Thousands of Tons



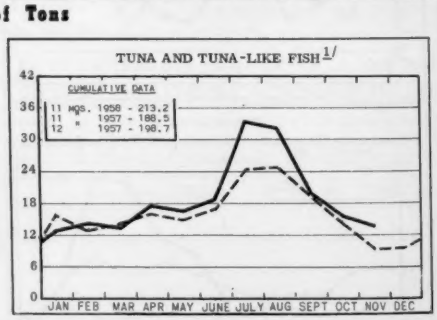
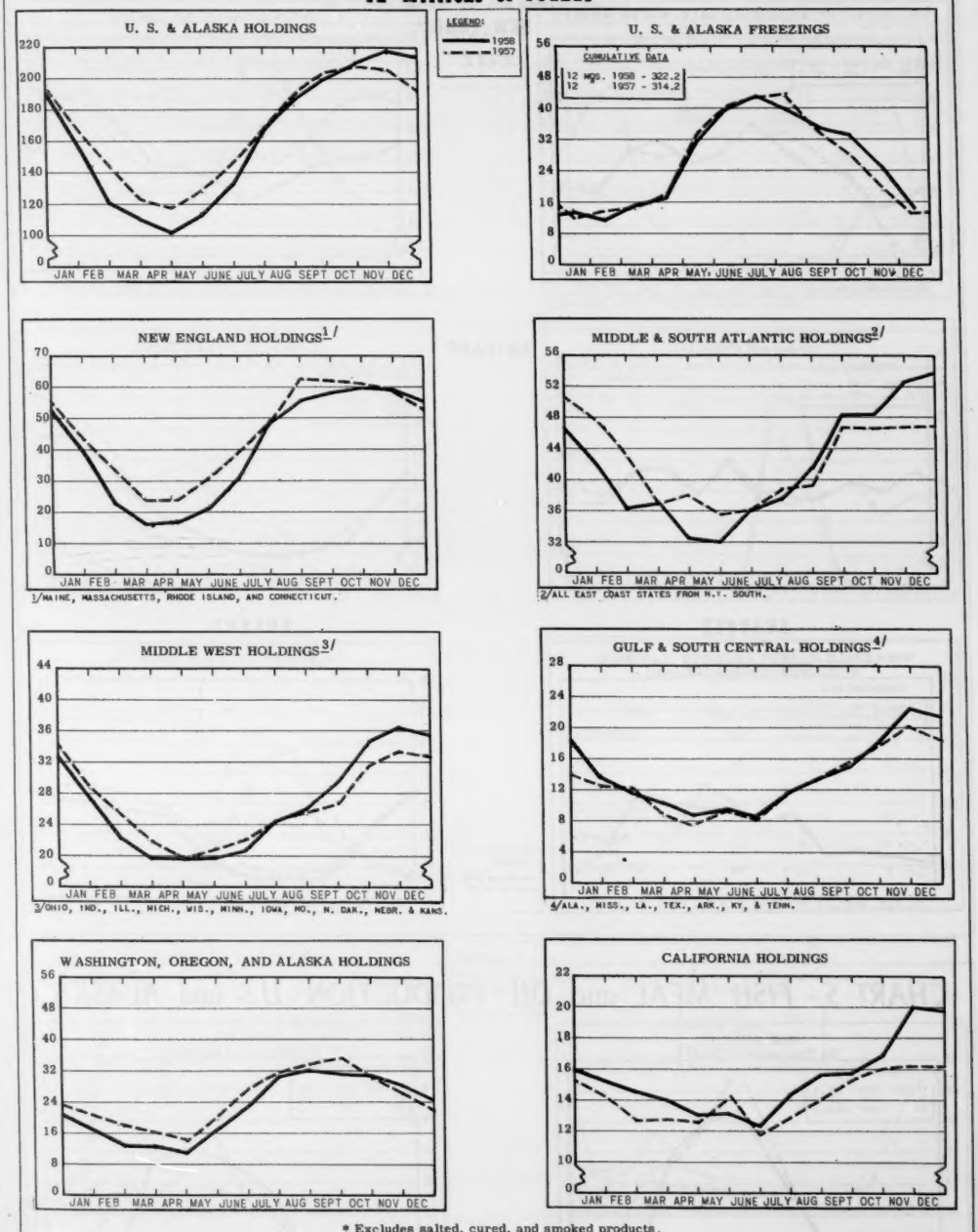

TUNA AND TUNA-LIKE FISH 1/
CUMULATIVE DATA
11 MOS. 1958 - 213.2
11 " 1957 - 188.5
12 " 1957 - 198.7
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

CHART 3 - COLD-STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS *

In Millions of Pounds


U. S. & ALASKA HOLDINGS
LEGEND:
1958
1957
U. S. & ALASKA FREEZINGS
CUMULATIVE DATA
12 MOS. 1958 - 322.2
12 1957 - 314.2
NEW ENGLAND HOLDINGS 1/
MIDDLE & SOUTH ATLANTIC HOLDINGS 2/
MIDDLE WEST HOLDINGS 3/
GULF & SOUTH CENTRAL HOLDINGS 4/
WASHINGTON, OREGON, AND ALASKA HOLDINGS
CALIFORNIA HOLDINGS
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

1/MAINE, MASSACHUSETTS, RHODE ISLAND, AND CONNECTICUT.

2/ALL EAST COAST STATES FROM N.Y. SOUTH.

3/OHIO, IND., ILL., MICH., WIS., MINN., IOWA, MO., N. DAK., NEBR. & KANS.

4/ALA., MISS., LA., TEX., ARK., KY, & TENN.

* Excludes salted, cured, and smoked products.

CHART 4 - RECEIPTS and COLD-STORAGE HOLDINGS of FISHERY PRODUCTS at PRINCIPAL DISTRIBUTION CENTERS

In Millions of Pounds

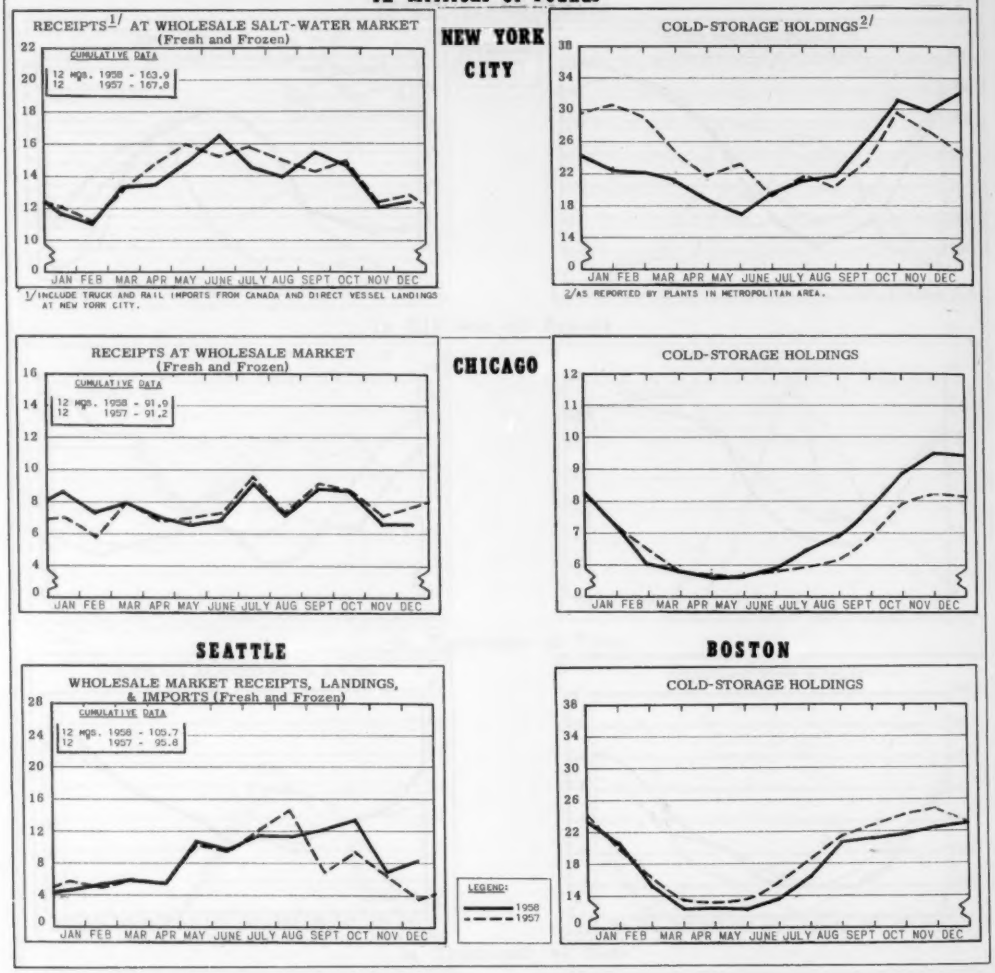

RECEIPTS 1/ AT WHOLESALE SALT-WATER MARKET (Fresh and Frozen)
CUMULATIVE DATA
12 MOS. 1958 - 163.9
12 " 1957 - 167.8
NEW YORK CITY
COLD-STORAGE HOLDINGS 2/
1/INCLUDE TRUCK AND RAIL IMPORTS FROM CANADA AND DIRECT VESSEL LANDINGS AT NEW YORK CITY.
2/AS REPORTED BY PLANTS IN METROPOLITAN AREA.
RECEIPTS AT WHOLESALE MARKET (Fresh and Frozen)
CUMULATIVE DATA
12 MOS. 1958 - 91.9
12 " 1957 - 91.2
CHICAGO
COLD-STORAGE HOLDINGS
SEATTLE
WHOLESALE MARKET RECEIPTS, LANDINGS, & IMPORTS (Fresh and Frozen)
CUMULATIVE DATA
12 MOS. 1958 - 105.7
12 " 1957 - 95.8
BOSTON
COLD-STORAGE HOLDINGS
LEGEND:
1958
1957
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

CHART 5 - FISH MEAL and OIL PRODUCTION - U.S and ALASKA

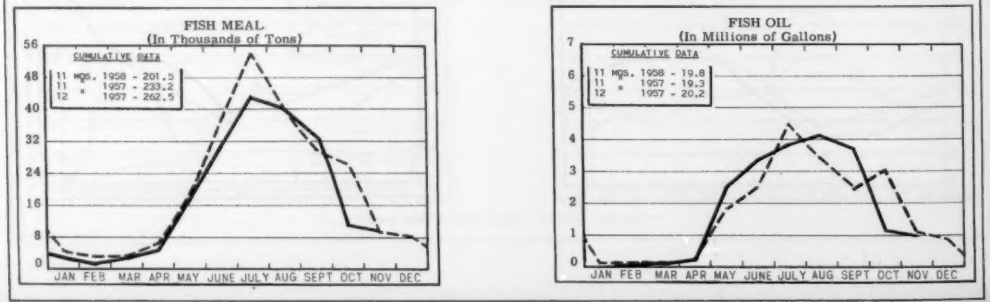
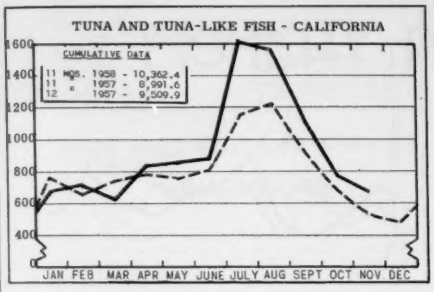
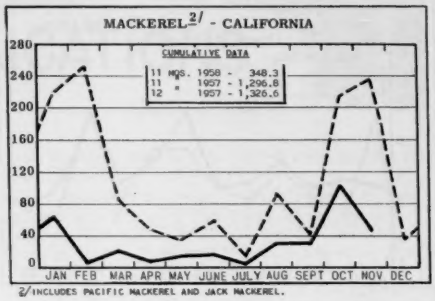

FISH MEAL
(In Thousands of Tons)
CUMULATIVE DATA
11 MOS. 1958 - 201.5
11 " 1957 - 233.2
12 " 1957 - 262.5
FISH OIL
(In Millions of Gallons)
CUMULATIVE DATA
11 MOS. 1958 - 19.8
11 " 1957 - 19.3
12 " 1957 - 20.2
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

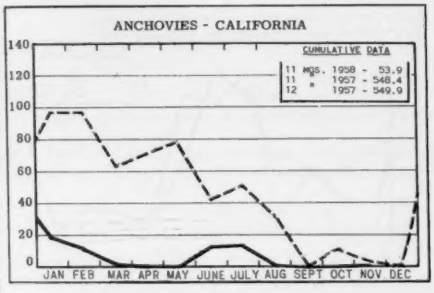
CHART 6 - CANNED PACKS of SELECTED FISHERY PRODUCTS

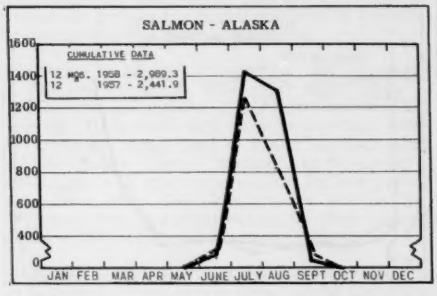
In Thousands of Standard Cases

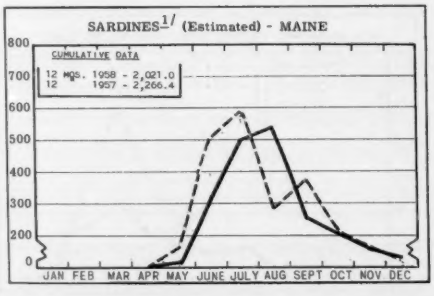




2/ INCLUDES PACIFIC MACKEREL AND JACK MACKEREL.

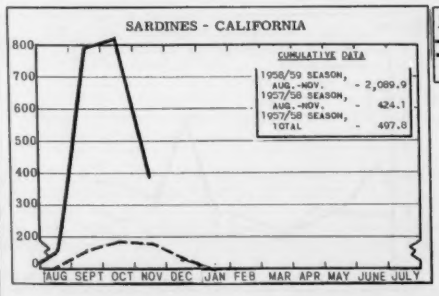


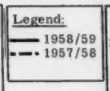




STANDARD CASES

Variety	No. Cans	Designation	Net Wgt.
SARDINES.....	100	¼ drawn	3¾ oz.
SHRIMP.....	48	--	5 oz.
TUNA.....	48	# ½ tuna	6 & 7 oz.
PILCHARDS...	48	# 1 oval	15 oz.
SALMON.....	48	1-lb. tall	16 oz.
ANCHOVIES...	48	½-lb.	8 oz.





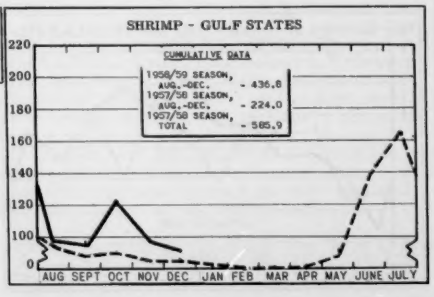
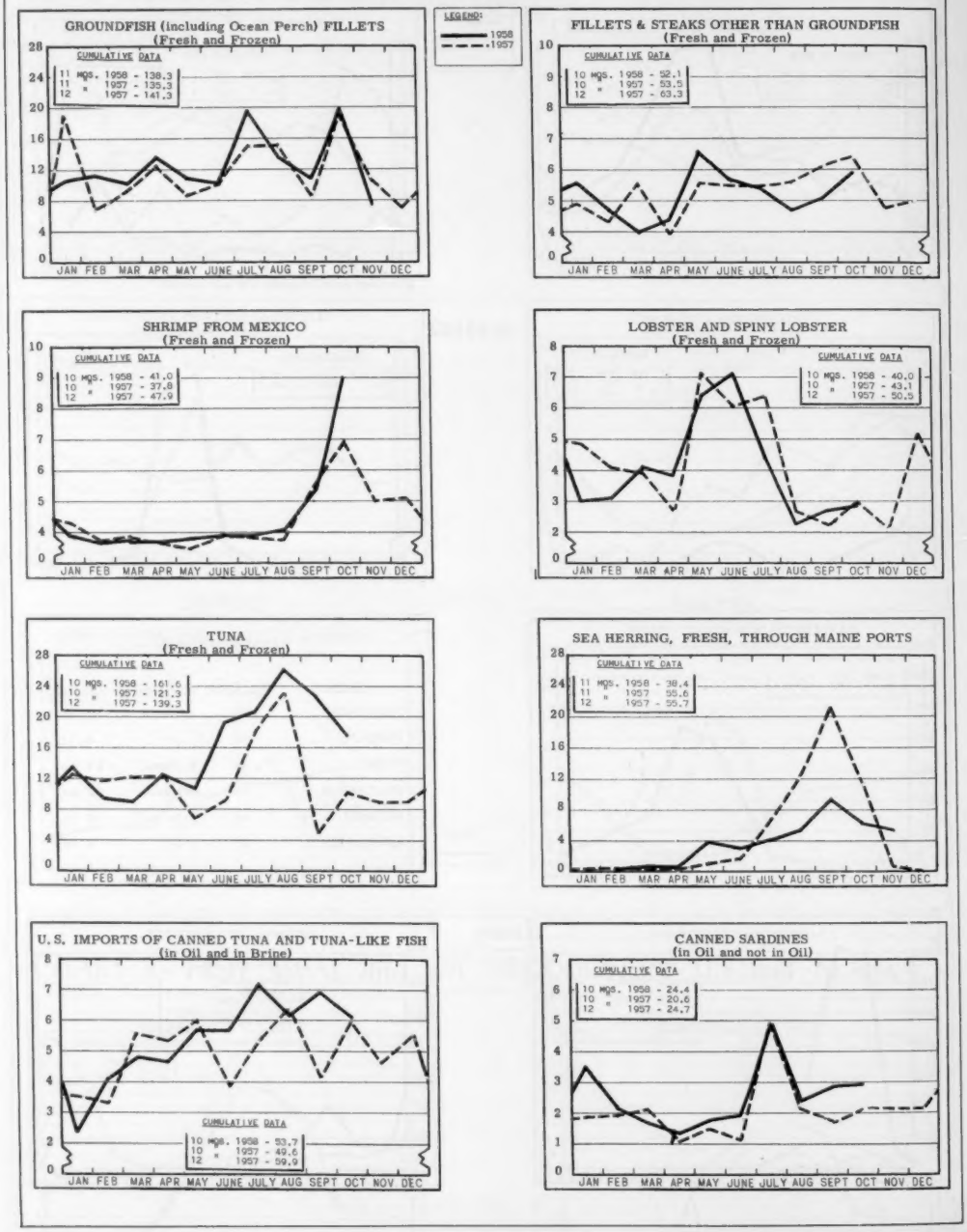


CHART 7 - U.S. FISHERY PRODUCTS IMPORTS

In Millions of Pounds


GROUNDFISH (including Ocean Perch) FILLETS
(Fresh and Frozen)
CUMULATIVE DATA
11 MOS. 1958 - 138.3
11 " 1957 - 135.3
12 " 1957 - 141.3
LEGEND:
1958
1957
FILLETS & STEAKS OTHER THAN GROUNDFISH
(Fresh and Frozen)
CUMULATIVE DATA
10 MOS. 1958 - 52.1
10 " 1957 - 53.5
12 " 1957 - 63.3
SHRIMP FROM MEXICO
(Fresh and Frozen)
CUMULATIVE DATA
10 MOS. 1958 - 41.0
10 " 1957 - 37.8
12 " 1957 - 47.9
LOBSTER AND SPINY LOBSTER
(Fresh and Frozen)
CUMULATIVE DATA
10 MOS. 1958 - 40.0
10 " 1957 - 43.1
12 " 1957 - 50.5
TUNA
(Fresh and Frozen)
CUMULATIVE DATA
10 MOS. 1958 - 161.6
10 " 1957 - 121.3
12 " 1957 - 139.3
SEA HERRING, FRESH, THROUGH MAINE PORTS
CUMULATIVE DATA
11 MOS. 1958 - 38.4
11 " 1957 - 55.6
12 " 1957 - 55.7
U.S. IMPORTS OF CANNED TUNA AND TUNA-LIKE FISH
(in Oil and in Brine)
CUMULATIVE DATA
10 MOS. 1958 - 53.7
10 " 1957 - 49.6
12 " 1957 - 59.9
CANNED SARDINES
(in Oil and not in Oil)
CUMULATIVE DATA
10 MOS. 1958 - 24.4
10 " 1957 - 20.6
12 " 1957 - 24.7
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U S FISH AND WILDLIFE SERVICE, WASHINGTON 25, D C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA
SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.
SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number Title

CFS-1887 - Rhode Island Landings, July 1958, 3 pp.
CFS-1901 - California Landings, June 1958, 4 pp.
CFS-1902 - Rhode Island Landings, August 1958, 3 pp.
CFS-1912 - Alabama Landings, August 1958, 2 pp.
CFS-1918 - New York Landings, September 1958, 4 pp.
CFS-1923 - Shrimp Landings, July 1958, 6 pp.
CFS-1925 - Frozen Fish Report, October 1958, 8 pp.
CFS-1927 - Massachusetts Landings, July 1958, 5 pp.
CFS-1928 - Louisiana Landings, June 1958, 2 pp.
CFS-1929 - Louisiana Landings, July 1958, 2 pp.
CFS-1930 - North Carolina Landings, October 1958, 3 pp.
CFS-1931 - Fish Meal and Oil, October 1958, 2 pp.
CFS-1932 - Ohio Landings, October 1958, 2 pp.
CFS-1933 - New Jersey Landings, October 1958, 2 pp.
CFS-1934 - Georgia Landings, October 1958, 2 pp.
CFS-1935 - Mississippi Landings, September 1958, 2 pp.
CFS-1936 - South Carolina Landings, October 1958, 2 pp.
CFS-1937 - Florida Landings, October 1958, 7 pp.
CFS-1939 - Maine Landings, October 1958, 3 pp.

Wholesale Dealers in Fishery Products (Revised):
SL- 6 - New York Coastal Area, 1958.
SL-21 - California, 1958.

Sep. No. 534 - A Survey of the American and Japanese Albacore Tuna Fisheries in the Pacific Through Examination of Catch Statistics.

Sep. No. 535 - The European Common Market and the United States Fishing Industry.

Sep. No. 536 - Research in Service Laboratories (January 1959): "Technical Note No. 49 - Measurement of Rancidity in Fishery Products by 2-Thiobarbituric Acid Method.

THE FOLLOWING SERVICE PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED.

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Prices, November 1958, 12 pp. (Market News Service, U. S. Fish and Wildlife Service, 565 W. Washington St., Chicago 6, Ill.) Receipts at Chicago by species and by states and provinces for fresh- and salt-water fish and shellfish; and wholesale prices for fresh and frozen fishery products; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, November 1958, 6 pp. (Market News Service, U. S. Fish and Wildlife Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf states shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; and wholesale prices of fish and shellfish on the New Orleans French Market; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, November 1958, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Fishery landings and production for the Virginia areas of Hampton Roads, Lower Northern Neck, and Eastern Shore; the Maryland areas of Crisfield, Cambridge, and Ocean City; and the North Carolina areas of Atlantic, Beaufort, and Morehead City; together with cumulative and comparative data; for the month indicated.

New England Fisheries--Monthly Summary, November 1958, 21 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Reviews the principal New England fishery ports, and presents food fish landings by ports and species; industrial fish landings and ex-vessel prices; imports; cold-storage stocks of fishery products in New England warehouses; fishery landings and ex-vessel prices for ports in Massachusetts (Boston, Gloucester, New Bedford, Provincetown, and Woods Hole), Maine (Portland and Rockland), Rhode Island (Point Judith), and Connecticut (Stonington); frozen fishery products prices to primary wholesalers at Boston, Gloucester, and New Bedford; and landings and ex-vessel prices for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange; for the month indicated.

(New York) Monthly Summary of New York City's Wholesale Fulton Fish Market Fishery Products Receipts, October 1958, 14 pp. (Market News

Service, U. S. Fish and Wildlife Service, 155 John St., New York 38, N. Y.) Includes receipts by species by states and provinces and methods of transportation; states and provinces by species and methods of transportation; totals by species with comparisons, for salt-water finfish and shellfish. Also contains frozen fishery products prices by primary wholesalers for the month indicated.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHER MENTIONED DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

ALGAE:

"B-Complex Vitamins in Certain Brown and Red Algae," by A. E. Teeri and R. E. Bieber, article, Science, vol. 127, no. 3313, June 27, 1958, p. 1500, printed. American Association for the Advancement of Science, 1515 Massachusetts Ave., NW., Washington 5, D. C.

"Sublittoral Algal Population in Port Erin Bay, Isle of Man," by Elsie M. Burrows, article, Journal of the Marine Biological Association of the United Kingdom, vol. 37, no. 3, October 1958, pp. 687-703, illus., printed. Cambridge University Press, 32 East 57th St., New York 22, N. Y.

ANTIBIOTICS:

"Antibiotic Action of Fish Components," by Masamichi Toyomizu, article, Nippon Suisan Gakkaishi, vol. 22, 1956-57, pp. 368-373, printed in Japanese. Japanese Society of Scientific Fisheries, Tokaiku Suisan Kenkyujo, No. 3, Tsukijima, Chuo-Ku, Tokyo, Japan.

"Antibiotic Residues in Shellfish After Cooking," by M. A. Benarde, article, Journal of the American Dietetic Association, vol. 33, no. 11, November 1957, pp. 1145-1149, printed. American Dietetic Association, Room 410, 620 Michigan Ave., Chicago 11, Ill.

BIOCHEMISTRY:

"The Yield of Insulin from Fish," by N. A. McCormick and E. C. Noble, article, Contributions to Canadian Biology, vol. 2, no. 7, pp. 117-127, printed. University of Toronto Press, Toronto, Ontario, Canada, 1924.

CANADA:

Journal of the Fisheries Research Board of Canada, vol. 15, no. 5, September 1958, pp. 759-1126, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Contains, among others, the following articles: "Comparisons of the Index of Return for Several Stocks of British Columbia Salmon to Study Variations in Survival," by H. Godfrey; "Maximum Sustained Yields from Fluctuating Environments and Mixed Stocks," by W. E. Ricker; "Spawning Stock Size and Resultant Production for Skeena Sockeye," by M. P. Shepard and F. C. Withler; and "Review of Certain Environmental Factors Affecting the Production of Pink and Chum Salmon," by W. P. Wickett.

The 1958 Herring Spawn Deposition in British Columbia Coastal Waters, by D. N. Outram, Circular no. 50, 13 pp., illus., processed. Fisheries Research Board of Canada, Biological Station, Nanaimo, British Columbia, Canada, September 1958. This is the fourth in an annual series of circulars on the success of herring spawning in British Columbia. "These reports," states the author, "are designed to inform the fishing industry on the status of the spawning stocks. The maintenance of an adequate spawning escapement is essential to ensure the perpetuation of the herring stocks. The amount of spawn deposited in any area is obviously related to the amount of fish that spawned, thus, annual assessments of the extent and intensity of all spawnings will form the basis for a qualitative index of the size of the spawning stock. The Pacific herring (Clupea pallasi) spawn in spring on marine algae and eel grass growing in or just below the intertidal zone. The boundaries of the spawn-laden vegetation become partially exposed during low tides and can be readily measured."

CANNING:

"Fish Canning. Part 1--Chilling of Pilchards," by C. E. B. Cooper, article, 9th Annual Report, pp. 13-14, printed. Fishing Industry Research Institute, University of Cape Town, Rondebosch, C. P., Union of South Africa, 1957.

"Manual Sorting of Pilchards for Canning," by M. K. Rowan, paper, Progress Report No. 29, 9 pp., printed. Fishing Industry Research Institute, University of Cape Town, Rondebosch, C. P., Union of South Africa.

The Potential Application of Antibiotics in the Salmon Canning Industry. 1--Organoleptic Evaluations, by Joseph A. Stern and others, Contribution No. 21, 9 pp., printed. School of Fisheries, University of Washington, Seattle, Wash., 1957.

COD-LIVER OIL:

"Production of Vitamin Concentrates from Baltic Cod-Liver Oil," by Henryk Niewiadomski and Bronislaw Drozdowski, article, Roczniki Technol. i Chem. Zywnosci (Annals of Food Technology and Chemistry), vol. 1, pp. 99-115, printed. Komitet Technologii i Chemii Zywnosci of the Wydzial Nauk Rolniczych i Lesnych of the Polska Akademia Nauk, Warsaw, Poland.

CONTAINERS:

"A New Fish Box Made of Plastic," article, La Revue de la Conserve, March 1957, p. 83, printed in French. La Revue de la Conserve, 1 Rue de la Reale, Paris 1, France.

COOKERY:

Choose Canadian Fish for Variety and Economy, 8 pp., processed. Department of Fisheries, Ottawa, Canada.

Favourite Fish Recipes, Consumer Bulletin No. 7, 11 pp., processed. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1957.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

Fish Recipes, 23 pp., processed. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1958.

The Way to Cook Fish, 8 pp., processed. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1958.

ELECTRICAL FISHING:
"Die Fanggerate der Elektrofischerei" (The Fishing Gear for Electrofishing), by E. Halsband, article Der Kescher, vol. 7, no. 1, January-February 1957, pp. 3-8, illus., printed in German. Verband deutsch Sportfischer, Hamburg 1, W. Germany.

ENGLISH SOLE:
Problems of Sampling a Puget Sound Population of English Sole, PAROPHRYS VETULUS, by Richard Van Cleve and Alonzo T. Pruter, Contribution No. 13, 7 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1956.

FACTORYSHIP:
"The Factoryship of the Future," by C. Birkhoff, article, Hansa, vol. 94, no. 12-13, March 23, 1957, p. 593, printed in German. Hansa Zeitschrift Schiffbau, Hafen, C. Schroedter & Co., Stubbenhuk 10, Hamburg 11, Germany.

World Fishing, vol. 7, no. 11, November 1958, 132 pp., illus., printed. John Trundell, Ltd., St. Richards House, Eversholt St., London N. W. 1, England. Includes, among others, a section entitled, "Factoryship Survey," which covers the following topics: "Is the Full-Scale Factory Trawler the Answer? A Modified View," by W. Lochridge; "Is the Mothership Idea Better," by C. Birkhoff; "Russians Will Have Over 90 Large Factory Trawlers;" "Fish Freezing Problems and Techniques," by M. B. F. Ranken; "Factory Deck Operations: The Russian Way;" "Factory Trawlers: the Crewing Position;" "The Two New Salvesen Vessels," by Norman James Cheater; and "Machine Filleting at Sea--Some of the Baader Range." In addition, there are smaller articles on: "How Many Factory Trawlers?;" "Fresh Water Supply for Factoryships;" "Fairtry Economics;" and "Factoryships: A Merchant's Views." These articles present trends in factoryship fishing and were contributed by authors in Russia, Poland, Germany, and the United Kingdom. The section deals with the design, operation, economics, and manning of factory trawlers. Many different opinions and ideas are described in an interesting and objective manner with a number of sketches and photographs included.

FILLETS:
"The Expressible Fluid of Fish Fillets" (VII. Freezing Damage and Protein Denaturation Under Pressure; VIII. Cell Damage in Slow Freezing; IX. Other Types of Cell Damage Caused by Freezing), by R. M. Love and O. Karsti, article, Journal of the Science of Food and Agriculture, vol. 9, May 1958, pp. 249-268, printed. Society of Chemical Industry, 9/10 Savile Row, W. 1, London, England.

"Should We Prewrap Fresh Fillets in Consumer Packages?" by C. H. Castell, article, Canadian Fisherman, vol. 15, June 1958, pp. 12, 15, printed. National Business Publications, Ltd., Gardenvale, Quebec, Canada.

FINGERLINGS:
A Factorial Study of the Response of Steelhead Trout, Chinook and Silver Salmon Fingerlings to Chain Barriers in Moving Water, by P. E. Fields and others, Technical Report No. 13, 7 pp., printed. School of Fisheries, University of Washington, Seattle, Wash., 1955.

FISH MEAL:
Feeding Trials with Skim Milk, Meat Meal, Fish Meal, and Soybean Oil Meal for Bacon Pigs, by A. Hellberg, O. Dahl, and K. I. Appelgren, National Animal Experiment Station, Royal Agricultural College Bulletin No. 62, 26 pp., printed in Swedish with English summary. Ultuna, Uppsala 7, Sweden, 1956.

"Fish Meal--Analysis," by D. Montequi and M. D. Garcia Pineda, article, Boletin del Instituto Espanol de Oceanografia (Bulletin of the Spanish Institute of Oceanography), No. 79, June 1956, p. 79, printed. Boletin del Instituto Espanola de Oceanografia, Alcalá 27, Madrid, Spain.

FISH OILS:
Animal and Vegetable Fats and Oils, 1957 (Facts for Industry), 48 pp., illus., processed, 20 cents. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) Bureau of the Census, Department of Commerce, Washington 25, D. C., 1958. Includes data on cod, cod-liver, fish, and marine-mammal oils in relation to factory production and consumption, factory and warehouse stocks, imports and exports.

"Manufacture of Vitamin A Concentrate from Fish-Liver Oil. VII--Estrification of Vitamin A Concentrate. 2--Acetylation with Ketene," by Hideo Higashi and Toyosuke Kinumaki, article, Nippon Suisan Gakkaishi, vol. 22, 1956-57, pp. 500-503, printed in Japanese. Japanese Society of Scientific Fisheries, Tokaiku Suisan Kenkyujo, No. 3, Tsukijima, Chuo-Ku, Tokyo, Japan.

FISH PONDS:
Ranch Fish Ponds, by C. J. D. Brown and Nels Thoreson, Bulletin No. 544, 26 pp., illus., printed. Agricultural Experiment Station, Bozeman, Montana, 1958.

FLORIDA:
Summary of Florida Commercial Marine Fish Landings for 1957, by Albert Rosen and Robert W. Ellis, in collaboration with Lloyd Johnson and Pierre Serio, 65 pp., illus., printed. State Board of Conservation, Tallahassee, Fla., 1958.

FOOD AND AGRICULTURE ORGANIZATION:
Indoor Drying of Salt Fish in South Brazil, by S. A. Beatty, E. Barros, R. C. Lamprecht, and M. Furuya, FAO Fisheries Papers No. 13, 13 pp., illus., processed. Fisheries Division,

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy, August 1958. The experiments carried out by the authors of this paper on indoor drying of salt fish in South Brazil is of practical interest to many semitropical and tropical countries where there is a need to introduce artificial drying of salt fish. As in other hot and humid countries, sun-drying of fish in southern Brazil is restricted for several reasons, chiefly that the sun is too hot for direct sun-drying in summer and climatic conditions are too humid in winter. Also, when fish are dried on racks, they often become dirty with sand and dust and the high summer temperatures favor the development of red halophilic bacteria, thus spoiling the fish. The authors constructed an experimental tunnel dryer which enabled them to obtain sufficient data to design a commercial dryer. A prototype was built with a capacity of 1,500-3,100 pounds of wet fish, depending on the size of fish, and operated through the hotter months of the Brazilian summer of 1957/58. It was found to be quite possible to dry the fish of South Brazil throughout the year in tunnels without dehumidification of the air. The fish were shown to withstand more heat than fish of the North Atlantic, none being visibly damaged by exposure to 120° F. Air temperatures of 97° - 102° F., and air velocity of 1.5 m. (5 ft.) a second, and a relative humidity of 50 percent maintained in the tunnel, were found to dry the fish rapidly.

FREEZING FISH AT SEA:

"Freezing at Sea is Successful," article, The Fishing News, no. 2318, September 1957, p. 3, printed. Arthur J. Heighway Publications, Ltd., Ludgate House, 110 Fleet St., London, E. C. 4, England.

"Quick Freezing at Sea," article, Modern Refrigeration, vol. 60, no. 716, November 1957, pp. 469-473, illus., printed. Refrigeration House, Victoria Rd., Woking, England.

FROZEN FOODS:

Frozen Food, Leaflet R-5, 15 pp., illus., processed. Massachusetts Extension Service, University of Massachusetts, Amherst, Mass. A guide for personnel handling frozen foods in modern retail food stores. It contains suggestions on how store managers and employees can increase sales and profits from frozen foods by improved maintenance of quality, handling efficiency, and turnover rate. This leaflet is designed especially for use in the educational programs conducted with food retailers by the Cooperative Extension Services of the New England State Universities.

GEAR:

"Behavior of Fishes Entering Trap Nets," by H. Miyamoto, article, Bulletin of the Tokai Regional Fisheries Research Laboratory, no. 15, January 1957, pp. 77-87, illus., printed. Tokai Regional Fisheries Research Laboratory, Tsukishima, Kuobashi, Tokyo, Japan.

"Dumping Deck Used to Chute Trash Overboard on Scalloper, Dartmouth," article, National Fisherman, vol. 38, no. 6, July 1957, p. 17, illus., printed. National Fisherman, Goffstown, N. H. A specially-constructed section of the deck of the 93-foot New Bedford scalloper Dartmouth can be raised hydraulically for dumping trash back into the sea. The captain of the Dartmouth claims that the hydraulic deck shortens the time at sea and makes more full trips possible. The device saves the work of shoveling overboard the debris brought up in the drags, and gives crew members more time for shucking and packing. When the deck raises, 16 feet of the side rails open at the same time and the upraised deck dumps its trash through the open rails.

"Maskanot rishonot al Avodat Reshet Kil ayim - Dgam B' b' Sefinat Hanisyonot Hatzvi" (Preliminary Results on the Operation of the Hybrid Net - Type B on the R/V Hatzvi), by E. Hamburger, article, Fishermen's Bulletin, no. 9, Sept. 1956, p. 43, printed in Hebrew. Fishermen's Bulletin, P. O. Box 699, Haifa, Israel.

Mechanization of Fishing Craft and the Use of Improved Fishing Gear, by E. R. A. de Zylva, Bulletin No. 7, 25 pp., illus., printed. Fisheries Research Station, Department of Fisheries, Colombo, Ceylon, 1958. In summary the author states that "Since the year 1925, attention has been focussed periodically on the stagnation in the local fishing industry, and those who have studied the subject have been unanimous about the need to introduce modern fishing craft capable of working more fishing gear. This report outlines the stages through which the evolution of more effective fishing operations has progressed, both in the gradually increasing use of mechanical propulsion for boats and in the adoption of more modern gear and techniques by local fishermen."

"Mivne Reshet Kill 'ayim - Dgam B'" (The Design of the Hybrid Net - Type B), by M. Ben-Yami, article, Fishermen's Bulletin, no. 9, Sept. 1956, 1 p., illus., printed in Hebrew. Fishermen's Bulletin, P. O. Box 699, Haifa, Israel.

"Tatzpiot tat-meymiot shell Reshet Kil ayim - Dgam B" (Underwater Observations of the Hybrid Net - Type B), by Y. Assaff, article, Fishermen's Bulletin, no. 9, Sept. 1956, pp. 41-42, illus., printed in Hebrew. Fishermen's Bulletin, P. O. Box 699, Haifa, Israel.

"Unterwasserantriebs-, Transport- und Mehrzweckegerät 'Jonas'" ('Jonas', a Multiple Gear for Underwater Observation, Transport, etc.), by O. Flössel, article, Gewässer, und Abwässer, Limnologische Schriftenreihe, no. 15/16, 1957, pp. 26-36, illus., printed in German. August Babel Verlag, Düsseldorf, W. Germany.

GENERAL:

Bulletin of Marine Science of the Gulf and Caribbean, vol. 8, no. 3, 1958, pp. 201-298, illus., printed. The Marine Laboratory, University of Miami, 1 Rickenbacker Causeway, Virginia Key, Miami 49, Fla. Contains, among others, the following articles: "A Review of Ciguatera, Tropical Fish Poisoning, with a

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Tentative Explanation of Its Cause," by John E. Randall; and "The Planktonic Larvae of Polydora websteri Hartman (Annelida, Polychaeta) and Their Settling on Oysters," by Sewell H. Hopkins.

United States Coast Pilot 5, 286 pp., printed, $2.50. Coast and Geodetic Survey, U. S. Department of Commerce, Washington 25, D. C. The latest edition of this publication cancels two 1949 editions which formerly covered, in separate volumes, the Gulf Coast and West Indies. It has been more than two years in the making, covers the Gulf Coast of the United States from Key West to the Rio Grande and also Puerto Rico and the Virgin Islands in the West Indies. By eliminating certain duplicated material and adopting a radical new format, the new Coast Pilot now contains nautical information that previously required more than 800 pages. A Coast Pilot would probably be described by the layman as a combination atlas, encyclopedia, geography text, and nautical guidebook all rolled into one. Actually each book contains information required by the navigator that cannot be shown conveniently on the nautical charts. It is a welcome addition aboard anything that floats, from a 14-foot outboard to the mighty passenger liner. The Coast Pilots are published to supplement the 814 nautical charts covering the coasts of the United States and its possessions. They include data relative to the coastline such as port information, sailing directions for coasting and entering harbors, and general information as to weather conditions, navigation regulations, and radio service. New editions are published about every seven years. Supplements, containing changes and new information, are published annually and distributed free. The new volume is the first to be published using the new and more compact format. Eventually only six volumes instead of the present nine will be needed to cover the coasts of the United States and its possessions.

GERMANY:

Jahresbericht über die Deutsche Fischerei 1957 (Annual Report on German Fisheries, 1957), 282 pp., illus., printed, DM 23 (US$5.50). Gebr. Mann, Berlin-Schoneberg, Germany, October 1958.

This interesting book contains the official annual fisheries report of the West German Government. It is issued by the Ministry of Food, Agriculture, and Forestry which contains the Fisheries Directorate. The Bureau of Statistics cooperated in preparation of the report, which is in the style of the Yearbook of the United States Department of Agriculture and Agricultural Statistics. The 282 pages are divided into three parts.

Part I contains detailed statistics on 1957 German fishery catch, craft, gear, imports, exports, prices and consumption. It opens with a general review by the Director of Fisheries, Dr. G. Meseck. The 1957 fish and shellfish landings amounted to 685,800 metric tons, valued at DM 252,940,000 (US$60.2 million). Catches of 22,733 metric tons, valued at DM 11,732,000 (US$2.8 million) were landed in foreign ports, directly from the fishing grounds. Herring, ocean perch, cod, and coalfish (pollock), in that order, were the most important species. The distant-water fisheries of the North Atlantic yielded less in 1957, and for the first time since 1950 the North Sea was the source of over 50 percent of the catch. A biological analysis of the statistical data is given. Other sections contain a detailed description of the fishing fleet and foreign trade.

Part II is devoted to detailed descriptions of biological, hydrographic, and meteorological research. Protective services are also described. Three protection vessels were operated. They handled about 2,000 patients. The fishery research vessel Anton Dohrn made 9 cruises. Research work is described, and a very interesting listing of available fisheries courses of instruction in various disciplines is given.

Part III contains reviews of activity during the year in various fishing and fish-processing segments of the industry. The German distant-water high-seas fishery, the herring fishery (lugger-type vessels), the near-water high-seas and coastal fisheries, inland fisheries, fish meal and oil, and fish-processing segments are covered.

Each of the three parts of the book are subdivided into sections, ranging in number from 5 for Part I to 7 for Part III. The sections consist of individual articles by government officials or members of the industry on the various subjects described above. This is a convenient arrangement and one that the reader welcomes, since none of the sections becomes laboriously long or too detailed.

The text is written in German. However, there is a short summary written in English at the end of each section. The tables also have subtitles in English. These subtitles adequately explain their contents. A knowledge of German is essential to get the most out of the book, but there is enough in the way of English summaries and subtitles to make it useful for reference purposes, especially for the statistical data.

The report should prove helpful to anyone interested in the fisheries of West Germany. It contains a wealth of current information on numerous subjects which are quite broad in scope.

--Walter H. Stolting

HAKE ROE:

"Determination of Moisture, Protein, Fat, Ash, and Chlorides in Hake Roe," by M. Muriel Ledesma, article, Anales de Bromatologia, vol. 8, no. 3, p. 313, printed. Sociedad Espanola de Bromatologia, Ciudad Universitaria, Edificio Facultad de Farmacia, Madrid, Spain, 1956.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

HERRING:

"Chemical Studies on Herring Meat," by Sasa Shigeo, article, Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 8, no. 4, February 1958, pp. 319-345, printed. Faculty of Fisheries (Hokodate) Hokkaido University, Hokodate, Hokkaido, Japan.

"L'industrie du Hareng en Grande-Bretagne" (The Herring Industry in Great Britain): "La Campagne Harenguiere en Belgique in 1957-58" (The Herring Fishery in Belgium in 1957-58): and "La Peche du Hareng en Norvege" (The Herring Fishery in Norway), articles, La Peche Maritime, vol. 37, no. 968, November 1958, pp. 669-675, illus., printed in French. La Peche Maritime, 190, Boulevard Haussmann, Paris, France.

"Volatile Amines of Herring Flesh," by R. B. Hughes, article, Nature, vol. 181, May 3, 1958, pp. 1281-1282, printed. Macmilland and Company, Ltd., St. Martins St., London W. C. 2, England.

ISRAEL:

Fishermen's Bulletin, no. 17, September 1958, 81 pp., illus., printed in Hebrew. Ministry of Agriculture, Division of Fisheries, P. O. B. 699, Haifa, Israel. Contains, among others, the following articles: "The Fisheries and Its Potential," by Z. Tzur; "The Fisheries and the Development Programmes for the Coming 5 Years," by M. Shavit; "The Trawl Fishery and Its Role in the Fishing Industry in the Light of the Proposed Development Programme," by M. Kramer; "Inshore and Pelagic Fishery," by Y. Ariav; "The Tenth Anniversary of the Lake Tiberias Fishery," by M. Bar-Ilan; "The Future of the Sea Fisheries," by A. Welner; "The Israel Fishery in Lake Tiberias During the First Decade," by M. Nun; "Fishing Gear Research in Israel," by M. Ben-Yami; and "Investigations of Sardinella Fisheries," by A. Ben-Tuvia.

LABOR:

Memorandum on the 43rd Session of the International Labour Conference, 1959, 12 pp., printed. International Labour Organisation, Geneva, Switzerland, 1958. Included in the report are conditions of work of fishermen.

LAW OF THE SEA CONFERENCE:

United Nations Conference on the Law of the Sea, Official Records, United Nations, New York, N. Y. (Any of the following are sold by International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.) The following reports have been issued:

A/CONF.13/38. _____ vol. II: Plenary meetings; summary records of meetings and annexes (Geneva, Feb. 24-Apr. 27, 1958), 183 pp., printed, US$1.75, Sept. 1958. (Sales no.: 58.V.4, Vol. II).

A/CONF.13/38/Corr. 1. _____ 1 p., Oct. 22, 1958. English only.

A/CONF.13/39. _____ vol. III: 1st Committee (Territorial Sea and Contiguous Zone); summary records of meetings and annexes. (Geneva, Feb. 24-Apr. 27, 1958), 277 pp., printed, US$3, Sept. 1958. (Sales no.: 58. V.4, Vol. III).

A/CONF.13/40. _____ vol. IV: 2nd Committee (High Seas: General Regime); summary records of meetings and annexes. (Geneva, Feb. 24-Apr. 27, 1958), 158 pp., printed, US$1.75, Sept. 1958. (Sales No.: 58. V.4, Vol. IV).

A/CONF.13/41. _____ vol. V: 3rd Committee (High Seas: Fishing: Conservation of Living Resources); summary records of meetings and annexes. (Geneva, Feb. 24-Apr. 27, 1958), 174 pp., printed, US$1.75, Sept. 1958. (Sales no.: 58. V.4, Vol. V).

A/CONF.13/42. _____ vol. VI: 4th Committee (Continental Shelf); summary records of meetings and annexes. (Geneva, Feb. 24-Apr. 27, 1958), 156 pp., printed, US$1.50, Sept. 1958. (Sales no.: 58. V.4, Vol. VI).

A/CONF.13/43. _____ vol. VII: 5th Committee (Question of Free Access to the Sea of Landlocked Countries). Summary records of meetings and annexes. (Geneva, Feb. 24-Apr. 27, 1958), 94 pp., printed, US$0.80, Sept. 1958. (Sales no.: 58. V.4, Vol. VII).

LOBSTERS:

The Lobster Fishery of Wales, by A. C. Simpson, Ministry of Agriculture, Fisheries and Food, Fishery Investigations, Series II, Vol. XXII, No. 3, 36 pp., illus., printed, 9s. (US$1.26). Her Majesty's Stationery Office, London, England. A survey of the existing lobster and crab fisheries on the coast of Wales. After an account of the history of lobster fishing on the Welsh coast since 1800, the present fishery is described in detail. The report covers the boats used in the fishery, crews, and numbers of pots; types of lobster pot used; fishing methods; bait; storage; and marketing. The yields and potentialities for lobster fishing off the Welsh coast are also discussed.

"Nouvelles Techniques de Conservation des Homards par Congelation" (New Techniques for Freezing and Storing Lobsters), article, Revue Pratique du Froid, no. 135, June 1957, p. 50, printed in French. Revue Pratique du Froid, 254 Rue de Vaugirard, Paris 15, France.

NORWAY:

"Smatralernes Fiske i 1957" (Small Trawler Fishery in 1957), by Sverre Mollestad, article, Fiskets Gang, vol. 44, no. 46, November 13, 1958, pp. 595-601, illus., printed in Norwegian. Fiskeridirektørens kontor, Postgiro nr. 691 81, Bergen, Norway

OYSTERS:

"Growth of Oysters (Ostrea edulis L.), by P. R. Walne, article, Journal of the Marine Biological Association of the United Kingdom, vol. 37, no. 3, October 1958, pp. 591-602, illus., printed. Cambridge University Press, 32 East 57th St., New York 22, N. Y.

POND CULTURE:

Pond Culture of Muskellunge in Wisconsin, by Leon D. Johnson, Technical Wildlife Bulletin No. 17, 54 pp., illus., printed. Game Manage-

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

ment Division, Conservation Department, Madison, Wis., 1958.

PRESERVATION:

Comparative Studies of the Effects of the Tetracycline Group of Antibiotics in the Preservation of Fish, by Joseph A. Stern and others, Contribution no. 20, 17 pp., printed. School of Fisheries, University of Washington, Seattle, Wash., 1957.

Investigations Concerning Preservation of Fish Products for Feeding, by Nils Olsson and N. Edvin Olofsson, National Animal Experiment Station, Royal Agricultural College Bulletin No. 59, 38 pp., printed in Swedish with English summary. Ultuna, Uppsala 7, Sweden, 1955.

"Protan Jelly Use Extended to Other Seafood Products and Strawberries," by A. Olesen, article, Quick Frozen Foods, vol. 20, no. 2, September 1957, pp. 238-239, printed. E. W. Williams Publications, Inc., 82 Wall St., New York 5, N. Y.

PRESERVATION BY IRRADIATION:

"Mulighederne for Konservering af Levnedsmidler Med Ioniserende Straling" (Possibilities of Preserving Foods by Means of Ionizing Radiation), by H. Riemann, article, Kulde, vol. 11, no. 4, Aug. 1957, pp. 39-45, illus., printed in Danish. Dansk Køleteknisk Tidsskrift, Øster Volgade 9, Copenhagen K., Denmark.

PROTEINS:

"Morphological Changes of Proteins and Effects of Denaturation," by L. B. Gorbacheva, S. E. Bresler, and S. Ya. Frenkel, article, Biochemistry (U. S. S. R.), vol. 22, nos. 1 and 3, pp. 66-78, printed in Russian. A. N. Bakh Institute of Biochemistry, Moscow, Russia. (English translation by Consultants Bureau, Inc., New York, N. Y.) Biokhimiya, Akademiya Nauk U. S. S. R., Podsosenski per. 21, Moscow, U. S. S. R.

"Studies on the Protein of Skeletal Muscle. 4--Ultra-centrifugal Analysis of Codling Extracts," by J. J. Connell, article, The Biochemical Journal, vol. 69, May 1958, pp. 5-12, printed. Cambridge University Press, 51 Madison Ave., New York 10, N. Y.

RAINBOW TROUT:

Development of Rainbow Trout Brood Stock by Selective Breeding, by Lauren R. Donaldson and Paul R. Olson, Contribution No. 23, 9 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1957.

SALMON:

The Application of Certain Conditioning and Handling Techniques to the Guidance of Downstream Migrant Salmon, by Donald E. Johnson and Paul E. Fields, Technical Report No. 35, 56 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1957.

Conditions Under Which Light Attracts and Repels Pre-Migratory Salmon in Clear and Turbid, Still and Running Water, by Donald E. Johnson and others, Technical Report No. 42, 15 pp., printed. School of Fisheries, University of Washington, Seattle, Wash., 1958.

The Effectiveness of Constant and Intermittently Flashing Light Barriers in Guiding Young Silver Salmon, by Paul E. Fields and Gary L. Finger, Technical Report No. 22, 22 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1956.

The Effects of Electroshock (a.c.) Upon Tissue Content of Inorganic Phosphate and Lactic Acid in Yearling Silver Salmon, by D. E. Johnson, R. E. Nakatani, and S. P. Felton, Technical Report No. 26, 6 pp., printed. School of Fisheries, University of Washington, Seattle, Wash., 1956.

A Field Test of the Effectiveness of Two Intensities of Shaded and Unshaded Lights in Guiding Downstream Migrant Salmon, by Paul E. Fields and others, Technical Report No. 21, 33 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1956.

Guiding Migrant Salmon by Light Repulsion and Attraction in Fast and Turbid Water, by Paul E. Fields and others, Technical Report No. 36, 44 pp., printed. School of Fisheries, University of Washington, Seattle, Wash., 1958.

The Reaction of Five Species of Young Pacific Salmon and Steelhead Trout, by Paul E. Fields and Gary L. Finger, Technical Report No. 7, 24 pp., printed. School of Fisheries, University of Washington, Seattle, Wash., 1954.

Reactions of Young Silver Salmon in Ten Velocity Combinations, by R. E. Carney and R. J. Adkins, Technical Report No. 23, 15 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1955.

The Response of Young Silver Salmon to a Light Barrier after Three Levels of Light Adaptation, by Paul E. Fields and A. Keith Murray, Technical Report No. 27, 9 pp., printed. School of Fisheries, University of Washington, Seattle, Wash., 1956.

The Role of Light Adaptation on Negative Phototaxis in Silver Salmon, ONCORHYNCHUS KISUTCH, by Gary L. Finger and Paul E. Fields, Technical Report No. 34, 25 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1957.

SANITATION:

"Chlorination in Fish Plants," by H. P. Dussault, article, Progress Reports of the Atlantic Coast Stations, no. 66, September 1957, pp. 13-14, printed. Fisheries Research Board of Canada, St. Andrews, N. B., Canada.

SAURY CANNING:

"Notas Sobre la Paparda y su Conserva" (Notes on Saury and its Canning), article, Industria Conservera, vol. 23, no. 222, December 1957, pp. 325-329, illus., printed in Spanish. Indus-

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

tria Conservera, Marques de Valladares 41, Apartado 258, Vigo, Spain.

SCALLOPS:
"The Breeding of the Scallop, Pecten maximus (L.), in Manx Waters," by James Mason, article, Journal of the Marine Biological Association of the United Kingdom, vol. 37, no. 3, October 1958, pp. 653-671, illus., printed. Cambridge University Press, 32 East 57th St., New York 22, N. Y.

SEAWEED:
"The Drying of Seaweeds and Other Plants. I--Through-Circulation Drying of ASCOPHYLLUM NODOSUM," by J. H. Merritt and E. T. Cosgrove, article, Journal of the Science of Food and Agriculture, vol. 9, May 1958, pp. 300-308, printed. Society of Chemical Industry, 9/10 Savile Row, W. 1, London, England.

SHARK-LIVER OIL:
"Fatty Acids and Glycerids of Shark (Pristis) Liver Oil," by G. G. Kamath and N. G. Magar, article, Journal of the Indian Chemical Society, vol. 19, 1956, pp. 171-176, printed. Institute of Science, Bombay, India.

SHRIMP:
"Shrimps and Shrimp Fishing Methods in the U. K.," by H. S. Noel, article, World Fishing, vol. 6, no. 6, June 1957, 5 pp., illus., printed. John Trundell, Ltd., Temple Chambers, Temple Ave., London E. C. 4, England.

SHRIMP CULTURE:
Pond Cultivation of Shrimp in South Carolina, by G. Robert Lunz, Contribution no. 29 from the Bears Bluff Laboratory, 6 pp., printed. (Reprinted from Proceedings of the Gulf and Caribbean Fisheries Institute, Tenth Annual Session, November 1957, pp. 44-48.) Bears Bluff Laboratories, Wadmalaw Island, S. C., 1958. Describes the work done at Bears Bluff Laboratory during the past 11 years in research on the growing of shrimp in salt-water ponds in the marshes of South Carolina. There are ample tidal marshes along the South Atlantic and Gulf Coasts where shrimp ponds could be built. The cost is estimated at $250 to $600 an acre for small individual ponds and $35 to $150 an acre for larger projects. "According to the author, if continued research and management studies can produce the volume of shrimp per unit area being produced in the Orient, a shrimp farm comparable in cost to a modern trawler can yield a much greater poundage of shrimp than can the trawler."

SPOILAGE:
"Biochemical Processes on the Decomposition of Hake," by G. Varela and R. Wojciech, article, Anales de Bromatologia, vol. 8, no. 1, p. 5, printed in Spanish. Sociedad Espanola de Bromatologia, Ciudad Universitaria, Edificio Facultad de Farmacia, Madrid, Spain.

STARFISH:
"Notes on Starfish on an Essex Oyster Bed," by D. A. Hancock, article, Journal of the Marine Biological Association of the United Kingdom, vol. 37, no. 3, October 1958, pp. 565-589, illus., printed. Cambridge University Press, 32 East 57th St., New York 22, N. Y.

STEELHEAD TROUT:
Conditioning Young Steelhead Trout to Colored Lights, by Ronald J. Adkins and Paul E. Fields, Technical Report No. 33, 20 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1957.

Response of Steelhead Trout, SALMO GAIRDNERII, to Continuous, Fixed Ratio Reinforcement Schedules, by A. Keith Murray and Paul E. Fields, Technical Report No. 45, 10 pp., illus., printed. School of Fisheries, University of Washington, Seattle, Wash., 1957.

STICKWATER:
"A Rapid Method of Determining the Concentration of Stickwater," by J. M. Clifton and F. F. Balaena, article, Norsk-Hvalfangst-Tidende (The Norwegian Whaling Gazette), vol. 44, no. 4, pp. 205-207, printed. Norsk Hvalfangst Tidende, Sandefjord, Norway.

TAGGING:
"An All-Plastic Dart-Type Fish Tag," by Daniel T. Yamashita and Kenneth D. Waldron, article, California Fish and Game, vol. 44, no. 4, October 1958, pp. 311-317, illus., printed. Single copy 75 cents. Department of Fish and Game, Sacramento 14, Calif.

TRAWLING:
"La Pêche du Hareng au Chalut-Boeuf" (Herring Fishing with Pair-Trawling), by C. Nédélac, article, Science et Pêche, no. 57, March 1958, 7 pp., illus., printed in French. Science et Peche, 59 Av. Raymond-Poincaré, Paris 16, France.

TUNA:
"L'Evolution Récente de l'Industrie du Thon" (Recent Development of the Tuna Industry), by L. Plouas and "Le Marché du Thon Tropical d'Origine Francaise: Les Conditions d'Expansion" (The Market for Tropical Tuna of French Origin: Conditions for Expansion), by A. Sahut-Morel, article, La Pêche Maritime, vol. 37, no. 968, November 1958, pp. 657-668, illus., printed in French. La Peche Maritime, 190 Boulevard Haussmann, Paris, France.

VITAMINS:
"B-Vitamins in Marine Products and Their Changes in Processing and Storage. I--Canned Mackerel and Tuna in Brine," by Yasushi Komata, Yoshiro Hashimoto, and Takajiro Mori, article, Nippon Suisangaku Kaishi, vol. 21, 1955-56, pp. 1236-1240, printed in Japanese. Japanese Society of Scientific Fisheries, Tokaiku Suisan Kenkyujo, No. 3, Tsukijima, Chuo-Ku, Tokyo, Japan.

"Vitamin B_{12} in Marine Fish," by Olaf R. Braekkan, article, Nature, vol. 182, no. 4646, November 15, 1958, p. 1386, printed. Macmillan & Co., Ltd., St. Martin's St., London, W. C. 2,

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

England; and St. Martin's Press, Inc., 103 Park Ave., New York 17, N. Y.

WHALES:

The Scientific Reports of the Whales Research Institute, no. 13, 332 pp., illus., printed. The Whales Research Institute, Tokyo, Japan, September 1958. Includes, among others, the following articles: "Growth of Fin Whale in the Northern Pacific," by S. Ohsumi, (Kimura), M. Nishiwaki, and T. Hibiya; "Age Study of Sperm Whale, Based on Reading of Tooth Laminations," by M. Nishiwaki, T. Hibiya, and S. Ohsumi (Kimura); "Gray Whale Observed in the Bering Sea," by T. Ichihara; "Studies of the Relation Between the Whaling Grounds and the Hydrographic Conditions. III," by M. Uda and N. Suzuki; "Amino Acid Composition of Whale Meat," by T. Ogawa, T. Tsunoda, and M. Osawa; "A Characteristic Property of Whale Oils Concerning the Absorption of Gases. II. On the Absorption of Nitrogen by Whale Oils," by Y. Ishihawa; and "Component Fatty Acids of Northern Elephant Seal Oil," by H. Tsuyuki.

"Structure of Sperm- and Sei-Whale Insulins and Their Breakdown by Whale Pepsin," by Yoshio Ishihara, Tsuneyki Saito, Yasuzo Ito, and Masahiko Fujino, article, Nature, vol. 181, May 24, 1958, pp. 1468-1469, printed. Macmillan and Co., Ltd., St. Martins St., London W. C. 2, England.

WISCONSIN:

"Trawling Comes to Wisconsin," by Richard F. Harris, article, Wisconsin Conservation Bulletin, vol. 23, no. 10, October 1958, pp. 21-23, illus., printed. Wisconsin Conservation Department, Madison 1, Wis. Describes the use of a trawl as a fish management tool in Lake Winnebago.

SALMON TRAVEL TO GREAT SLAVE LAKE

The immense distances traveled by Pacific salmon after they leave the sea and enter fresh water are well known in British Columbia, the Yukon, and Alaska. Recently, however, a commercial fisherman on Great Slave Lake in the Northwest Territories of Canada netted a salmon near the mouth of the Buffalo River. It was later identified as a three-year-old chum which had made the long journey up the Mackenzie River from the Arctic Ocean. Salmon have been found in Great Slave Lake before, but the occurrence is rare. (March 1958 Trade News of the Canadian Department of Fisheries.)

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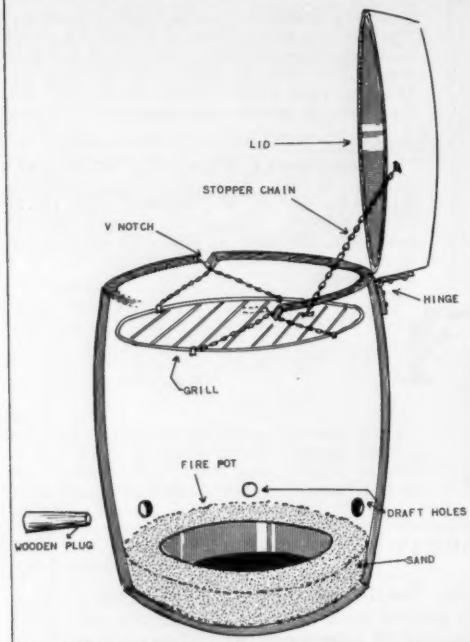
SMOKE BARREL COOKERY

Making barrels for smoke-cooking fish is easy. Here's how it is done.

Start with a used 40-gallon charred oak whiskey barrel or anything similar. Saw around the barrel about 8 inches from the top. This is then used as the lid and is secured to the rest of the barrel with a heavy hinge. To keep the lid from toppling over backwards when salmon is removed, attach a chain stopper.



Because the two grill-supporting chains lap over the rim of the barrel and would prevent a complete closure of the lid, notch two shallow V's on either side of barrel. Attach hooks or pins at the base of the V's to fasten the chains.

Allow for 4 or 5 inches of sand in which the fire pot will eventually be imbedded, bore 5 or 6 draft holes, one-half inch in diameter, around the sides of the barrel just above the sand level. Make wooden plugs to fit the holes.

The fire pot can be any heavy metal cylinder such as the bottom of a dutch oven. An ideal pot is an old automobile brake drum. However, it should be small enough to allow for 3 or 4 inches of sand insulation between barrel and the pot.

The round grill for the top of the barrel can be purchased at any store that specializes in barbecue equipment.

The grill is supported by two Y-shaped chains. The upper legs of the Y are equipped with snap-ons to fasten the grill. The bottom leg of each Y fastens on the hooks at the base of the notched V's.

To use the barrel the sand at the bottom should first be soaked with water. The fire is started with charcoal briquets and then the smoke-producing wood is added.

While fish is smoking, care must be taken not to let the fire flare up. This is controlled by inserting the wooden plugs in the draft holes until an ideal balance between fire and smoke is achieved.

Wood used for smoking depends upon taste and availability. Any nonresinous hard wood such as alder, apple, maple, oak, birch, or beech can be used.

Wood should be cut into small chunks about 4 inches in length or just long enough so they can be pyramided in the fire pot.

Barrel is now ready for use. To prepare the salmon for smoking, fillet them and remove the backbone. Cut into chunks suitable for individual servings. Soak chunks in saturated brine solution for an hour and a half. (Soaking time can be varied to suit individual tastes.)

Remove the chunks from the solution and arrange a single layer on grill rack, avoiding crowding. Lower grill into smoke barrel about 8 inches. Close and cook for about an hour and a half or until done, making sure fire is smoking and not burning during entire cooking process.

If the barrel is not used for any length of time, it is necessary to remove fire pot, insert draft plug holes, and fill with water to keep barrel from warping.

Although salmon is often used, the "smoke barrel" method can also be used for many other kinds of fish like cod, whitefish, haddock, halibut, and lake trout. Method used is essentially the same as for the salmon. (Institutions, vol. 42, June 1958, pp. 41-43.)

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NEW METHOD OF DISPLAYING MARKET NEWS

A new method of displaying market news was shown by the Agricultural Marketing Service at the International Livestock Exposition, November 28-December 6, 1958. The exhibit featured a teletype news projector. This device was used in the exhibit to show livestock market news on a large screen as it is received over the nationwide leased-wire system.

The projector is now used to display stock market reports in brokerage houses and other spots in large financial centers. Its adaptability for the display of agricultural market news, now covering more than 100 commodities, is being tested by Agriculture. The equipment used in the display was loaned to the Department by the manufacturer.

Fig. 1 - Teletype News Projector Displays Livestock Market News in U. S. Department of Agriculture Exhibit.

Livestock market news, which was automatically projected onto a screen 17½ by 51 inches, represents reports gathered by Agriculture market reporters from 46 livestock and meat trading centers throughout the country and moved over the 13,000 miles of teletype wires maintained by the Agriculture Market News Services.